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Background Document for Second Third Wastes to Support 40 CFR Part 268, Land Disposal Restrictions. Proposed Rule. Second Third Waste Volumes, Characteristics, and Required and Available Treatment Capacity

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This document support the proposed rule for the second third of wastes scheduled for restriction from land disposal. It estimates the quantities of wastes that will require alternative treatment and recovery prior to land disposal. It also evaluates the availability of alternative treatment and recovery capacity necessary to manage wastes diverted from land disposal, taking into account the demands already placed on that capacity by previous land disposal restrictions.

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PROPOSED RULE

SECOND THIRD WASTE VOLUMES, CHARACTERISTICS, AND REQUIRED AND AVAILABLE TREATMENT CAPACITY

U.S. Environmental Protection Agency
Office of Solid Waste
401 M Street, S.W.
Washington, D.C. 20460

December 1988

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EXECUTIVE SUMMARY

This document supports the proposed rule for the second third of wastes scheduled for restriction from land disposal under Section 3004(m) of the Resource Conservation and Recovery Act (RCRA) as amended by the Hazardous and Solid Waste Amendments of 1984. It estimates the quantities of wastes that will require alternative treatment and recovery prior to land disposal. It also evaluates the availability of alternative treatment and recovery capacity necessary to manage wastes diverted from land disposal, taking into account the demands already placed on that capacity by previous land disposal restrictions.

To date, the land disposal restriction program has promulgated final rules on the surface disposal (treatment or storage in waste piles; treatment, storage, or disposal in surface impoundments; and disposal in landfills and land treatment units) of solvent and dioxin-containing wastes, California List wastes, and wastes from the the first third of the "scheduled" wastes. It has also promulgated final rules on the underground injection of solvent and dioxin-containing wastes and on California List wastes and certain wastes included within the First Third scheduled wastes. From this point forward, restrictions on surface disposal and underground injection become concurrent. This document therefore includes capacity analyses for both surface disposal and underground injection wastes.

All capacity analyses supporting the land disposal restriction program are now based on data developed from the National Survey of Hazardous Waste Treatment, Storage, Disposal, and Recycling Facilities (the TSDR Survey). This survey is a census of all RCRA-permitted and interim status hazardous waste treatment, disposal, and recycling facilities. It also contains a representative sample of hazardous waste storage facilities. Data developed from the TSDR Survey provide detailed information on the volume and characteristics of wastes currently sent to land disposal, as well as on current and planned capacity for treatment and recovery. Before the TSDR Survey data set was available, earlier rules relied primarily on the 1981 Regulatory Impact Analysis (RIA) Mail Survey. Since all analyses using these less reliable data have been re-evaluated using TSDR Survey data, previous results are not mentioned here unless the new data have led to revisions in regulatory policy.

Legal Background

The Hazardous and Solid Waste Amendments (HSWA) to RCRA, enacted on November 8, 1984, set basic new priorities for hazardous waste management. Land disposal, which has been the most widely used method for managing hazardous waste, is now the least preferred option. Under HSWA, the U.S. Environmental Protection Agency (EPA) must promulgate regulations restricting the land disposal of hazardous wastes according to a strict statutory schedule. As of the effective date of each regulation, land disposal of untreated wastes covered by that regulation is prohibited unless it can be demonstrated that there will be no migration of hazardous constituents from the disposal unit for as long as the waste remains hazardous.

HSWA's schedule divided hazardous wastes into three broad categories. The first category, which contained wastes restricted under regulations issued on November 7, 1986, includes generic solvent and dioxin wastes. The second category, whose final rule was issued on July 8, 1987, covers wastes originally listed by the State of California and adopted intact within HSWA. The California List comprises the following classes of wastes: liquid hazardous wastes with a pH of less than 2.0 (acidic corrosive wastes); all liquid hazardous wastes containing free cyanides, various metals, and polychlorinated biphenyls (PCBs) exceeding statutory concentration levels; and all wastes (liquid or solid) containing halogenated organic compounds (HOCs) in concentrations greater than or equal to specified statutory levels. All other hazardous wastes fall into the last category, referred to as "scheduled" wastes. HSWA requires EPA to promulgate regulations for these wastes on a timetable that would restrict at least one-third of them by August 8, 1988, at least two-thirds of them by June 8, 1989 (today's proposed rule), and the rest by May 8, 1990.

Under the land disposal restrictions program, EPA must identify levels or methods of treatment that substantially reduce the toxicity of a waste or the likelihood of migration of hazardous constituents from the waste. Where possible, EPA prefers to define treatment in terms of performance (i.e., levels of treatment, expressed as a concentration of hazardous constituents in residuals from treatment) rather than in terms of specific treatment methods. HSWA requires, however, that levels specified in the regulations be demonstrated and available. Accordingly, EPA's standards are generally based on the performance of the best demonstrated available technology (BDAT), as documented by treatment data collected at well-designed and well-operated systems using that technology, or based on data derived from the treatment of wastes that EPA believes are similar to the regulated waste, and more difficult to treat than the regulated waste.

The land disposal restrictions are effective immediately upon promulgation unless the Agency grants a national variance from the statutory date because of a lack of available capacity. For every waste group, EPA considers, on a national basis, both the capacity of commercially available treatment or recovery technologies and the quantity of restricted wastes currently sent to land disposal for which onsite capacity is not available. If the Agency determines that adequate alternative treatment or recovery capacity is available for a particular waste or waste group, the land disposal restriction goes into effect immediately. If not, the Agency establishes an alternative effective date based on the earliest date on which adequate treatment or recovery capacity will be available, or two years, whichever is less.

Summary of Capacity Analyses for Previous Rules

Previous rules under the land disposal restriction program have estimated national supply and demand for alternative waste management capacity as described below.

Solvents and Dioxins

EPA promulgated the first rule under the land disposal restriction program on November 7, 1986 (51 FR 40572). This rule established treatment standards expressed as concentrations in waste extracts for spent solvent wastes (F001-F005) and wastes contaminated with dioxin (F020-F023 and F026-F028). It prohibited land disposal of wastes in these categories unless they contain less than the specified concentrations.

EPA's original capacity analysis for solvent wastes, based on the RIA Mail Survey, indicated shortages in available capacity for wastewater treatment and incineration. The Agency therefore granted a 2-year national capacity variance for CERCLA wastes and RCRA corrective action wastes, small quantity generator wastes, and all wastes containing less than 1 percent total F001-F005 solvent constituents. When the initial analysis was later reevaluated using TSDR Survey data, however, EPA found that capacity is adequate for these wastes.

The original capacity analysis for dioxin-containing wastes showed that there was no available incineration capacity for accepting these wastes. The November 7, 1986, rule therefore also granted a 2-year national capacity variance for these wastes. Current capacity estimates for these wastes are unchanged.

California List Wastes

The California List defines wastes in terms of general characteristics rather than waste codes. It covers classes of wastes originally listed by the State of California and adopted intact within HSWA, including all liquid hazardous wastes with a pH of less than or equal to 2.0 (acidic corrosive wastes), all liquid hazardous wastes containing free cyanide, metals, or PCBs in concentrations greater than or equal to limits specified in HSWA, and all hazardous wastes, liquid or solid, containing HOCs in amounts greater than or equal to limits specified in HSWA.

EPA promulgated its final rule on the California List wastes on July 8, 1987 (52 FR 25760). For HOC wastes, EPA named incineration as the required treatment, and did not set a concentration-based limit for treatment. For PCB wastes, the Agency specified thermal treatment in accordance with 40 CFR 761.60 as the treatment standard. For acidic corrosive wastes, the Agency prohibited all land disposal of wastes with a pH less than or equal to 2.0, but did not specify a treatment standard. The final rule did not establish prohibition levels for metal or cyanide wastes, so the prohibition limits specified in the statute took effect.

The capacity analysis for this rule was originally based on the RIA Mail Survey, which indicated that incineration capacity for HOC wastes was inadequate. The Agency therefore granted a 2-year national variance for HOC wastes. Capacity was found to be adequate for all other

California List wastes. The HOC variance was, however, terminated on November 8, 1988, because later capacity analysis using the TSDR Survey found incineration capacity to be adequate and the variance unnecessary.

First Third Wastes

EPA promulgated the final rule for certain First Third wastes on August 17, 1988. The remaining First Third wastes, for which treatment standards were not established, therefore became covered by the "soft hammer" requirements. Under the soft hammer requirements, such wastes may continue to be disposed of in a landfill or surface impoundment in compliance with the minimum technological requirements specified in RCRA section 3004(o) only after certifying to EPA that no treatment capacity is available and that disposal is the only practical alternative. Such continued land disposal is allowed until EPA sets a standard for the waste in question. If the Agency has not set a standard by May 8, 1990, the waste is automatically prohibited from further land disposal.

The capacity analysis for the First Third wastes indicated that adequate treatment capacity exists for all First Third wastes except:

- Petroleum refining wastes (K048, K049, K050, K051, K052), for which BDAT is sludge incineration or solvent extraction;
- High zinc (greater than or equal to 15 percent zinc) electric arc furnace dust (K061), for which BDAT is high temperature metals recovery; and
- Mercury cell chlorine production waste (K071), for which BDAT is acid leaching.

The Agency therefore granted 2-year national capacity variances to all these wastes. In the case of high zinc K061 wastes, however, it required these wastes to be treated to meet the standard for low zinc wastes throughout the variance period.

Underground Injected Wastes

EPA has promulgated two final rules restricting the underground injection of certain wastes. The first, promulgated on July 26, 1988, addressed solvent and dioxin wastes. Using the TSDR Survey data, EPA found that capacity is adequate for solvent wastes containing greater than or equal to one percent total F001-F005 solvent constituents, for which the BDAT technology is incineration, and therefore, no variance was granted to these wastes.

On the other hand, the TSDR Survey data indicated that alternative treatment capacity is inadequate for underground injected solvent wastes containing less than or equal to one percent total F001-F005 solvent constitutents, for which the BDAT technology is wastewater treatment. The Agency therefore granted a national capacity variance for these wastes until August 8, 1990.

In addition, the Agency also found that no dioxin-containing wastes are being underground injected, so no alternative treatment capacity is required for these wastes.

The second rule, promulgated on August 16, 1988 (53 FR 30908), addressed injection of California List wastes and certain First Third wastes (K049-K052, K062, K071, and K104). This analysis showed inadequate alternative treatment capacity for almost all underground injected California List wastes, the only exceptions being for wastes containing greater than 50 ppm PCBs and wastes containing greater than 1,000 ppm of HOCs, both of which require incineration. It also found that alternative treatment capacity is inadequate for all underground injected First Third wastes covered by the rule. EPA therefore granted national capacity variances until August 8, 1990, for all underground injected First Third wastes and all underground injected California List wastes for which treatment capacity is inadequate.

In addition to the two final rules mentioned above for underground injected wastes, EPA recently proposed its regulatory approach for the remaining underground injected First Third wastes (53 FR 40480). In this proposal, EPA proposed to subject First Third wastes for which EPA did not promulgate a BDAT standard for in the August 17, 1988, final rule (53 FR 31138) to the soft hammer requirements. EPA also proposed not to grant a national capacity variance to First Third wastes for which BDAT standards have been developed but which are not currently underground injected.

Finally, for First Third wastes for which a standard was established and which are currently underground injected, specifically K016, K019, K030, and K103, the Agency found sufficient capacity exists for all these except dilute K016 (<1 percent) wastewaters. Consequently, the Agency proposed to grant a national capacity variance only to dilute K016 (<1 percent) wastes.

Data Source

The TSDR Survey was originally mailed, in August 1987, to approximately 2,400 RCRA-permitted or interim status facilities. Since that date, an additional 225 new or previously overlooked facilities have been included. By October 1988, the cutoff date for the capacity analysis for Second Third wastes, over 2,500 surveys had been received, reviewed for completeness and accuracy, and analyzed.

Of the approximately 2,500 facilities, 475 reported onsite land disposal/land placement of 63 billion gallons of RCRA hazardous waste in baseline year 1986. Of the facilities, 373 reported having commercially-available treatment/recovery technologies onsite; these accounted for 14 billion gallons of treatment capacity. Of this 14 billion gallons of capacity, however, only a subset of facilities offered BDAT treatment technologies applicable to the rules promulgated or proposed to date (the final rules summarized above, plus the current Second Thirds proposed rule). Some facilities offered various applicable BDAT noncombustion technologies, mostly wastewater treatment, accounting for an estimated total capacity of 2.5 billion gallons per year in 1988. Forty-seven facilities reported commercial combustion processes applicable for burning hazardous wastes currently land disposed, accounting for a maximum of 497 million gallons of capacity in 1988.

Methodology for Capacity Analysis

To evaluate the adequacy of alternative treatment capacity for specific waste categories, EPA first puts restricted wastes into "treatability groups" that require similar treatment or management practices; for instance, all wastes requiring sludge incineration would be placed in the same treatability group. Where wastes present particular problems in treatment, the Agency may identify "treatment trains" of multiple technologies operating in sequence. Volumes of wastes in each treatability group are adjusted to reflect the November 1988 rule that allows treatment in minimum technology surface impoundments. The net total volume of currently land disposed hazardous waste requiring alternative treatment capacity becomes the required capacity for that treatability group. EPA then assigns the volumes of waste in each treatability group to treatment technologies or treatment trains.

Determinations of available capacity take several factors into account. First, some treatment processes will generate various treatment residuals, which then have to be assigned to, and accounted for within other treatability groups. Second, available capacity -- the difference between currently utilized capacity and the total capacity of the treatment system -- must take account of the commercial status of each facility managing waste within a treatability group.

- Available treatment capacity at privately-owned facilities used exclusively by the waste generator cannot be considered available to other generators.
- All available capacity at commercial facilities is considered fully available to any generator.

Capacity analysis begins at the facility level and aggregates upward toward the national level, assigning available excess capacity by observing the above rules. For example, available capacity at private treatment systems applies only to wastes currently land disposed at the same site. Remaining wastes are assigned to commercial capacity.

Each regulation within the land disposal restrictions program accounts for the sequential and cumulative effects of all previous regulations and for projected capacity changes after 1986, as reported in the TSDR Survey. Solvents and dioxins have been considered first, followed by California List wastes, First Third promulgated wastes, and, finally, the current Second Third proposed wastes. Available capacity has been assigned first to all affected surface disposed wastes and then to all underground injected wastes. EPA sets this priority because it believes that land disposal in surface units may represent a greater threat to human health and the environment than does underground injection.

Results

Table 1 shows capacity requirements for solvent wastes, by type of treatment technology.

Table 2 shows capacity requirements for California List HOC wastes, by type of treatment technology.

Table 3 shows capacity requirements for First Third wastes for which a treatment standard was promulgated (i.e., excludes soft hammer First Third wastes), by type of treatment technology.

Table 4 summarizes the variance determinations from previous rulemakings.

Table 5 shows capacity requirements for surface disposed wastes covered by the current proposed rule on Second Third wastes, by type of treatment technology.

Table 6 shows capacity requirements for underground injected wastes covered by the current proposed rule on Second Third wastes, by treatment technology.

Table 7 shows capacity requirements for Second Third wastes by individual RCRA waste code.

Table 8 shows capacity requirements for soil and debris contaminated with wastes covered by the current proposed rule on Second Third wastes, by treatment technology.

Table 1 Summary of 1988 Capacity Analysis for Solvents[a]

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)	Comment
Combustion			
- Liquids	275	1	No capacity variance
- Sludges/solids	47	38	No capacity variance
Stabilization of incinerator ash	499	4	No capacity variance
Wastewater treatment			
- Cyanide oxidation, chemical precipitation, and settling/filtration	159	<1	No capacity variance
- Steam stripping, carbon adsorption, biological treatment, or wet air oxidation	66	2	No capacity variance

[a] Volumes do not include underground injected waste and soil/debris.

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Table 2 Summary of 1988 Capacity Analysis for California List HOC Wastes[a]

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)	Comment
Combustion			
- Liquids	274	<1	No capacity variance
- Sludges/solids	9	2	No capacity variance
Wastewater treatment	64	7	No capacity variance
- Steam stripping, carbon adsorption, biological treatment, or wet air oxidation			

[a] Volumes do not include underground injected waste and soil/debris.

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Table 3 Summary of 1988 Capacity Analysis for First Third Promulgated Wastes[a]

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)	Comment
Combustion			
- Liquids	274	<1	No capacity variance
- Sludges/solids	7	6 - 160[b]	National capacity variance (K048-K052)
Stabilization	495	231[c]	
Solvent extraction	1	0 - 154	National capacity variance (K048-K052)
Metals recovery			
- High temperature metals recovery (not secondary smelting)	34	62	National capacity variance (high zinc K061)
Wastewater treatment			
- Chromium reduction, chemical precipitation, and settling/filtration	260	40	No capacity variance
- Carbon adsorption and chromium reduction, chemical precipitation, and settling/filtration	12	1	No capacity variance
Sludge Treatment			
- Acid leaching, chemical oxidation, and dewatering of sludge and sulfide precipitation of effluent	0	4	National capacity variance (K071)

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[a] Volumes do not include underground injected waste and soil/debris.

[b] 6 million gallons of non-K048-K052 wastes require sludges/solids combustion. The amount of K048-K052 sludges/solids requiring combustion may be as much as 154 million gallons. An alternative BDAT technology for these wastes is solvent extraction.

[c] This volume includes 62 million gallons of "high zinc" K061 for which BDAT is high temperature metals recovery; however, although granted a 2-year national capacity variance, they must be treated by stabilization to meet the standard for "low zinc" K061.

Table 4 Summary of Variance Determinations for Underground Injected Solvents, California List HOCs, and First Third Promulgated Wastes

Waste category	Technology	Variance determination
Solvents		
- Containing <1% total F001-F005 solvent constituents	Wastewater treatment (steam stripping, carbon adsorption, biological treatment, or wet air oxidation)	National capacity variance (F001-F005)
- Containing ≥1% total F001-F005 solvent constituents	Combustion (liquids)	No capacity variance
California List HOCs[a]		
- Wastewater containing HOCs ≤10,000 ppm and ≥1,000 ppm	Wastewater treatment	No capacity variance
- liquids/solids containing HOCs ≥1,000 ppm	Combustion	Capacity variance withdrawn based on TSDR Survey data
Promulgated First Third Wastes		
- K048-K052	Combustion or solvent extraction	National capacity variance (K048-K052)
- K062	Chromium reduction, chemical precipitation, and settling/filtration	National capacity variance (K062)
- K071	Acid leaching	National capacity variance (K071)
- K104	Solvent extraction followed by steam stripping and carbon adsorption with combustion of the solvent stream from extraction	National capacity variance (K104)

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[a] Wastes containing HOCs <1,000 ppm are not California List wastes.

Table 5 Summary of 1988 Capacity Analysis for Second Third Proposed Wastes[a]

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)	Comment
Combustion			
- liquid	216	<1	No capacity variance
- sludges/solids	76	8	No capacity variance
Wastewater treatment			
- cyanide destruction	91	5	No capacity variance
Stabilization	264	9	No capacity variance
Secondary smelting	52	1	No capacity variance

[a] Volumes do not include underground injected waste and soils/debris.

Table 6 Summary of 1988 Capacity Analysis for Underground Injected Second Third Proposed Wastes

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)	Comment
Combustion			
- liquid	216	373	National capacity variance (K011, K013, & K014)
Wastewater treatment			
- cyanide destruction	96	127	National capacity variance (F007)
- wet air oxidation and biological treatment	0	957	National capacity variance (K011, K013, & K014)
- steam stripping and/or biological treatment	57	109	National capacity variance (K009 & K010)
- carbon adsorption	2	<1	No capacity variance
- chromium reduction and chemical precipitation	220	<1	No capacity variance
Stabilization	255	7	No capacity variance

Table 7. Summary of Capacity Analysis for Second Third Wastes by Waste Code*

	Wastes streams other than soil and debris				
Waste Code	1988 Non-deepwell volume requiring alternative capacity (million gallons/year)	Adequate alternative capacity available (yes/no)	1988 Deepwell volume requiring alternative capacity (million gallons/year)	Adequate alternative capacity available (yes/no)	Total (million gallons/year)
**F007	1.3	yes	127.6	no	128.9
**F008	2.4	yes	<0.1	yes	2.4
**F009	0.3	yes	<0.1	yes	0.3
**F010	<0.1	yes	0	yes	<0.1
**F011	0.1	yes	0	yes	0.1
**F012	0.1	yes	0	yes	0.1
**F019	9.5	yes	<0.1	yes	9.5
**F024	<0.1	yes	0	yes	<0.1
K002	0.4	yes	0	yes	0.4
K003	0.4	yes	0	yes	0.4
K006	0.4	yes	0	yes	0.4
K009	0	yes	54.4	no	54.4
K010	0	yes	54.4	no	54.4
**K011	0.2	yes	512.6	no	512.8
**K013	0.1	yes	486.6	no	486.7
**K014	<0.1	yes	126.3	no	126.3
**K027	7.5	yes	0	yes	7.5
K115	0.2	yes	0	yes	0.2
**U221	0.3	yes	26.8	yes	27.1
U223	<0.1	yes	<0.1	yes	<0.1
K093	<0.1	yes	0	yes	<0.1
K094	<0.1	yes	0	yes	<0.1
**P029	0	yes	<0.1	yes	<0.1
**P030	<0.1	yes	<0.1	yes	<0.1
**P063	0.1	yes	184.3	yes	184.4
**P098	<0.1	yes	<0.1	yes	<0.1
**P106	<0.1	yes	0	yes	<0.1
P039	<0.1	yes	0	yes	<0.1
P071	<0.1	yes	<0.1	yes	<0.1
P089	<0.1	yes	<0.1	yes	<0.1
P094	<0.1	yes	0	yes	<0.1
P044	<0.1	yes	0	yes	<0.1
U087	0	yes	<0.1	yes	<0.1
U028	<0.1	yes	0	yes	<0.1
U069	<0.1	yes	0	yes	<0.1
U190	<0.1	yes	<0.1	yes	<0.1
Total	23.9		1,573.1		1,597.0

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* This table only includes Second Third wastes for which treatment standards are being proposed and that were identified from the TSDR Survey as having land disposal volumes requiring alternative treatment.

** Indicates that multiple alternative treatment/recovery methods are specified for a particular waste code (see Section 2.2.6 for details).

Table 8 Summary of Capacity Analylsis for Soil and Debris
Contaminated with Second Third
Proposed Wastes by Waste Code

Waste code	1988 Volume requiring alternative capacity (million gallons/year)	Adequate alternative capacity available (yes/no)
F007	1.6	no
F008	<0.1	no
F009	0.5	no
F010	<0.1	no
F011	<0.1	no
F019	0.1	no
K011	<0.1	no
K013	<0.1	no
K113	<0.1	no
U221	<0.1	no
U223	<0.1	no
P029	<0.1	no
P030	<0.1	no
P044	<0.1	no
P063	<0.1	no
P071	<0.1	no
P094	<0.1	no
P106	<0.1	no
U028	0.4	no
U069	<0.1	no
U190	<0.1	no
	4.0	

1. INTRODUCTION

This section contains a brief summary of the legal background on the Land Disposal Restriction Program, a summary of the results of capacity analyses to support prior restrictions, and an introduction to the capacity analysis for those wastes analyzed for this rule.

1.1 Legal Background

1.1.1 General Requirements Under HSWA

The Hazardous and Solid Waste Amendments of 1984 (HSWA), enacted on November 8, 1984, amended the Resource Conservation and Recovery Act of 1976 in several significant ways. Among other initiatives, the amendments require the Environmental Protection Agency (EPA) to promulgate regulations restricting the land disposal of hazardous wastes according to a strict, detailed schedule. This effort is generally referred to as the Land Disposal Restriction Program.

1.1.2 Schedule for Developing Restrictions

HSWA set a strict, detailed schedule for establishing treatment standards, based generally on priorities related to the volume and intrinsic hazards of different types of wastes. Two groups received early attention: (1) solvent and dioxin wastes, to be regulated within 24 months of HSWA's passage, and (2) the so-called "California List" wastes, to be regulated within 32 months. The solvent/dioxin waste group identified in HSWA includes those solvent wastes covered under waste codes F001, F002, F003, F004, and F005, as well as the dioxin-containing wastes covered under waste codes F020, F021, F022, and F023 (RCRA 3004(e)).[*]

The California List wastes, a group of wastes originally listed by the State of California and adopted intact within HSWA, include liquid hazardous wastes containing metals, free cyanides, PCBs, acidic corrosives (pH of less than or equal to 2.0), and any liquid or nonliquid hazardous waste containing halogenated organic compounds (HOCs) above 0.1 percent (1,000 ppm) by weight.

Priorities for all other hazardous waste listed under RCRA section 3001 were established separately, based on considerations of volume and intrinsic hazard, in a formal schedule submitted to Congress on November 8, 1986 (RCRA section 3004(g)(1)). This schedule requires all land disposal restriction regulations to be in place by May 8, 1990. Consistent with the requirements of HSWA, EPA divided all other listed hazardous wastes into three groups (the "Thirds"), to be regulated in successive stages over a period of 66 months from the passage of HSWA on November 8, 1984.

The overall schedule for the Land Disposal Restriction Program is as follows:

- Solvents and dioxins: Final standards promulgated on November 7, 1986.

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[*] The final dioxin regulation also established treatment standards for F026, F027, and F028.

- California List wastes: Final standards promulgated on July 8, 1987.
- "First Third" scheduled wastes: Final standards promulgated on August 8, 1988.
- "Second Third" scheduled wastes: Final standards to be promulgated on or before June 8, 1989.
- "Third Third" scheduled wastes: Final standards to be promulgated on or before May 8, 1990.

1.1.3 Variance from the Schedule

The land disposal restrictions are effective when promulgated unless the Administrator grants a national capacity variance and establishes a different date, not to exceed 2 years beyond the statutory deadline, based on "the earliest date on which adequate alternative treatment or recovery capacity which protects human health and the environment will be available" (RCRA section 3004(h)(2)).

In addition, if EPA fails to set a treatment standard by the statutory deadline for any hazardous waste, the waste becomes subject to the so-called "soft hammer" requirements. Under the soft hammer requirements, the waste may continue to be disposed of in a landfill or surface impoundment, but only if the facility is in compliance with the minimum technological requirements specified in RCRA section 3004(o). Furthermore, prior to such disposal, generators must certify to EPA that they (1) have investigated available treatment capacity and (2) have determined that disposal in a landfill or surface impoundment is the only practical alternative to treatment currently available to the generator. Such continued land disposal is allowed until EPA sets a standard for the waste in question, or until May 8, 1990, whichever is sooner. If the Agency has not set a standard by May 8, 1990, the waste is automatically prohibited from further land disposal, except in a land disposal unit that has made a successful "no migration" demonstration. These demonstrations are based on case-by-case petitions that must show that there will be no migration of hazardous constituents from the disposal unit for as long as the waste remains hazardous.

1.2 Summary of Previous Land Disposal Restrictions

Capacity analyses to support previous land disposal restrictions were performed using the best data available at the time to develop national estimates of both the amount of waste land disposed and the available alternative commercial treatment and recovery capacity. Analyses of affected wastes considered the combination of waste code, physical/chemical form, and type of restricted management practice to determine the amount of alternative capacity required.

1.2.1 Solvents and Dioxins

The Land Disposal Restriction Program began with the promulgation of the solvents and dioxins final rule on November 7, 1986 (51 FR 40572). The final rule encompassed spent solvent wastes (F001-F005) and dioxin-containing wastes (F020-F023 and F026-F028), and established treatment standards expressed as concentrations in the waste extract. The rule prohibits land disposal of solvent and dioxin wastes unless the wastes contain less than the specified concentrations of hazardous constituents.

For that final rule, EPA performed an analysis of required and available treatment/recovery capacity. The Agency used the 1981 Regulatory Impact Analysis (RIA) Mail Survey (Ref. 1) to identify the volume of land disposed solvent wastes subject to the restrictions. Although EPA did not establish required treatment technologies for these wastes, the Agency used the physical and chemical characteristics that were reported for each waste stream to identify the technology or technologies that EPA assumed would be used to meet the treatment standards. The waste volumes were distributed among the applicable technologies as shown below:

Waste stream	Applicable treatment and recovery technologies
Solvent-water mixtures	Wastewater treatment
Organic liquids	Distillation Fuel substitution Incineration
Organic sludges	Fuel substitution Incineration
Inorganic sludges or solids	Incineration

After identifying the required alternative capacity for solvent wastes, the Agency analyzed the available commercial capacity for these technologies.

Analysis of available commercial capacity (supply) and required capacity (demand) showed shortfalls in available capacity for wastewater treatment and incineration. Consequently, the Agency granted a 2-year national capacity variance to CERCLA and RCRA corrective action wastes;

small quantity generator (SQG) wastes; and all wastes containing less than 1 percent total F001-F005 solvent constituents, i.e., solvent-water mixtures, solvent-containing sludges, and solvent-contaminated soil (40 CFR 268.30 and Ref. 2).

EPA determined the volume of dioxin-containing waste generated annually and affected by the restrictions. Incineration capacity for these dioxin wastes was determined to be nonexistent; therefore, a 2-year national capacity variance was granted (51 FR 40617).

The final rule for First Third Wastes, published on August 17, 1988 (53 FR 31138), included a reanalysis of available and required treatment capacity for solvent wastes using data from EPA's new data set based on the results of the National Survey of Hazardous Waste Treatment, Storage, Disposal, and Recycling Facilities (the TSDR Survey). The results of this reanalysis demonstrated that adequate capacity exists for solvent wastes. The Agency therefore allowed the capacity variances to expire on November 8, 1988.

1.2.2 California List

Unlike the solvents and dioxins rule, the California List rule is not waste code specific. The California List includes all liquid hazardous waste with a pH of ≤ 2.0 (i.e., acidic corrosive waste); all liquid hazardous wastes containing free cyanide, metals, or polychlorinated biphenyls (PCBs) in concentrations greater than or equal to those specified in 40 CFR 268.32; and all hazardous wastes (liquid or solid) containing halogenated organic compounds (HOCs) in amounts greater than or equal to the levels specified in 40 CFR 268.32.

The California List final rule was promulgated on July 8, 1987 (52 FR 25760). This rule required the use of specific technologies rather than the establishment of performance-based standards for California List PCB wastes and certain California List HOC wastes. Specifically, the rule requires incineration in accordance with 40 CFR Part 264, Subpart O, or Part 265, Subpart O, for HOC wastes (except HOC wastewaters) and thermal treatment in accordance with 40 CFR 761.60 or 761.70 for PCB wastes. EPA codified the statutory prohibition level (RCRA section 3004(d)(2)) for acidic corrosive wastes (those with a pH of $\leq$2.0), but did not promulgate a treatment standard for these wastes. The final rule did not establish prohibition levels for metal or cyanide wastes; therefore, upon promulgation, the RCRA section 3004(d)(2) statutory levels became effective.

The Agency originally used data from the 1981 RIA Mail Survey (Ref. 1) to determine the maximum potential volume of land disposed waste subject to the California List restrictions. To determine the required alternative treatment capacity for these waste volumes, EPA identified those technologies that it believed would generally be used to treat California List wastes. The Agency then determined the commercially available alternative treatment capacity for these wastes.

A comparison of required and available treatment capacity for the California List wastes for which BDAT has been established showed that incineration capacity for HOC wastes was inadequate. Consequently, the Agency granted a 2-year national capacity variance to HOC wastes requiring incineration. On the other hand, the Agency determined that adequate capacity for PCB wastes did exist, and thus did not grant a variance to these wastes. EPA believes that acidic corrosive, cyanide, and metal wastes can be treated to below the California List statutory levels by tank treatment methods including neutralization, cyanide oxidation, chromium reduction, and chemical precipitation. Furthermore, since the rule applies only to liquid wastes, they may still be land disposed after being rendered nonliquid. Consequently, the Agency believes that adequate capacity for these wastes exists and did not grant a capacity variance for them (Ref. 3).

The final rule for First Third wastes, however, included a reanalysis of required and available treatment capacity for California List HOC wastes based on the TSDR Survey data. The results indicated significant changes in waste management practices and capacity, specifically, substantial increases in commercial incineration capacity. As a result, the Agency determined that capacity variances were no longer needed for HOC wastes, except for HOC-contaminated soils, and therefore terminated the California List HOC variance on November 8, 1988.

1.2.3 First Third Wastes

On August 17, 1988, the Agency promulgated the final rule for the First Third wastes. This final rule promulgated treatment standards for some of the First Third wastes. The remaining First Third wastes for which treatment standards were not established were covered by the soft hammer requirements.

The Agency used the TSDR Survey data set to determine the required and available commercial treatment/recovery capacities. Required and available commercial treatment/recovery capacities were then compared. This comparison showed adequate capacity for all First Third wastes except petroleum refining wastes (K048, K049, K050, K051, and K052) for which BDAT is sludge incineration or solvent extraction; high zinc (greater than or equal to 15 percent zinc) electric arc furnace dust (K061) for which BDAT is high temperature metals recovery; and mercury cell chlorine production waste (K071) for which BDAT is acid leaching. Consequently, the Agency granted a 2-year national capacity variance to K048-K052 and K071 wastes. The Agency also granted a 2-year national variance from the high temperature metals recovery-based standards to high zinc K061 wastes, but in the interim is requiring these wastes to meet the standard for low zinc K061 based on stabilization (Ref. 4).

1.2.4 Underground Injected Wastes

To date, the Agency has promulgated two final rules restricting the underground injection of certain wastes. The first of these rules, published on July 26, 1988 (53 FR 28118), restricted solvent and dioxin wastes. For this final rule, the Agency used the results of TSDR Survey to perform an analysis of required and available treatment/recovery capacity. The results of the analysis showed that inadequate capacity exists for the volume of underground injected solvent wastes containing less than 1 percent total F001-F005 solvent constituents for which the BDAT standard is based on wastewater treatment (steam stripping, biological treatment, wet air oxidation, or carbon adsorption). Consequently, the Agency granted a national capacity variance from the treatment standard until August 8, 1990, to solvent wastes containing less than 1 percent total F001-F005 solvent constituents which are disposed of by injection in Class I wells.

Conversely, the analysis also showed that adequate capacity did exist for the volume of solvent wastes containing greater than or equal to 1 percent total F001-F005 solvent constituents for which the BDAT standard is based on incineration. Consequently, these wastes were restricted from underground injection on August 8, 1988. Furthermore, available data showed that no dioxin wastes are being injected and thus the Agency did not grant a variance from the August 8, 1988, effective date for restricting the underground injection of these wastes.

The second final rule (53 FR 30908) restricted the underground injection of California List wastes and certain First Third wastes, specifically K062, K049-K052, K071, and K104. For this rule, the Agency used data from the Hazardous Waste Injection Well Database (HWIWDB) and the TSDR Survey to perform a capacity analysis for these wastes. This analysis showed inadequate capacity for all underground injected California List wastes except for those containing greater than 50 ppm polychlorinated biphenyls (PCB) requiring thermal treatment and wastes containing HOCs greater than 1,000 ppm requiring incineration. Furthermore, the analysis identified insufficient capacity for all the First Third wastes subject to the rulemaking (K062, K049-K052, K071, and

K104). The Agency granted a 2-year national capacity variance to underground injected California List wastes (except PCB wastes greater than 50 ppm and HOC wastes greater than 1,000 ppm) and K049-52, K062, K071, and K104 wastes.

For the remainder of underground injected First Third wastes, the Agency published its proposed approach on October 26, 1988 (53 FR 43400). For underground injected First Third wastes (including P and U wastes) for which EPA has not set treatment standards, the Agency is proposing that these wastes be subject to the soft hammer provisions of RCRA.

This proposed rule also identified those First Third wastes for which BDAT has been established but which current data indicates are not being underground injected. EPA therefore proposed that these wastes be banned from underground injection upon the date of final promulgation of this rule. These wastes include: K001, K015, K018, K020, K024, K037, K044, K045, K047, K048, K087, K099, K101, and K102 wastes; nonwastewater forms of K004, K008, K021, K022, K025, K036, K060, K061, and K100; the no ash nonwastewater component of K083; the noncalcium sulfate nonwastewater form of K069; and K086 solvent washes.

Finally, this proposed rule proposed effective dates for injected First Third wastes with established BDAT that were not addressed in the August 16, 1988 final rule discussed previously. The Agency determined that sufficient capacity exists for K019 and K030 wastes for which BDAT is biological degradation, for concentrated K016 wastes ($\geq$1%) and for

K103 for which BDAT is liquid combustion. For dilute K016 (<1%) wastes for which BDAT is biological treatment followed by wet air oxidation, however, the Agency determined that sufficient capacity does not exist. Consequently for K019, K030, K103 and concentrated K016 ($\geq$1%) underground injected wastes, the Agency did not propose to grant a national capacity variance. For dilute K016 (<1%) underground injected wastes, however, the Agency proposed to grant a national capacity variance until August 8, 1990.

1.3 Introduction to Today's Proposal

Today the Agency is proposing treatment standards for some of the Second Third wastes, for some of the First Third wastes currently subject to the soft hammer provisions, and also some of the wastes that were originally Third Third wastes. These wastes, hereafter referred to as Second Third proposed wastes, are listed in Table 1-1. This table also identifies in which Third the waste was originally placed.

The Agency used the TSDR Survey to estimate the amount of commercial capacity available for and required by Second Third proposed wastes. The results of this analysis showed that adequate commercial capacity does exist for all Second Third proposed wastes currently surface disposed (i.e., treatment or storage in waste piles, treatment, storage, or disposal in surface impoundments, and disposal by land treatment and landfills). The Agency is therefore not proposing to grant a capacity variance to any surface disposed Second Third proposed wastes. The analysis also showed that inadequate commercial capacity exists for the volume of underground injected wastes requiring liquid combustion, cyanide destruction, and wastewater treatment for organics. Consequently, the Agency is today proposing to grant a 2-year national capacity variance to underground injected K011, K013, and K014 wastes for which BDAT is incineration or wet air oxidation followed by biological treatment, to underground injected K009 and K010 wastes for which BDAT is steam stripping and/or biological treatment, and to underground injected F007 wastes for which BDAT is cyanide destruction.

Section 2 contains the detailed results of the capacity analysis for Second Third proposed wastes, including a capacity analysis for each code (Section 2.6).

Table 1-1 Second Third Proposed Waste Codes

Waste code	Description	Original Third
F007	Spent cyanide plating bath solutions from electroplating operations	1
F008	Plating sludges from the bottom of plating baths from electroplating where cyanides are used in the process	1
F009	Spent stripping and cleaning bath solutions from electroplating operations where cyanides are used in the process	1
F010	Quenching bath residues from oil baths from metal heat treating operations where cyanides are used in the process	2
F011	Spent cyanide solutions from salt bath pot cleaning from metal heat treating operations	2
F012	Quenching wastewater treatment sludges from metal heat treating operations where cyanides are used in the process	2
F019	Wastewater treatment sludges from the chemical conversion coating of aluminum	1
F024	Wastes, including but not limited to, distillation residues, heavy ends, tars, and reactor cleanout wastes from the production of chlorinated aliphatic hydrocarbons, having carbon content from one to five, utilizing free radical catalyzed processes	2
K002	Wastewater treatment sludge from the production of chrome yellow and orange pigments	3
K003	Wastewater treatment sludge from the production of molybdate orange pigments	3
K004	Wastewater treatment sludge from the production of zinc yellow pigments	1
K005	Wastewater treatment sludge from the production of chrome green pigments	3
K006	Wastewater treatment sludge from the production of chrome oxide green pigments (anhydrous and hydrated)	3

Table 1-1 (Continued)

Waste code	Description	Original Third
K007	Wastewater treatment sludge from the production of iron blue pigments	3
K008	Oven residue from the production of chrome oxide green pigments	1
K009	Distillation bottoms from the production of acetaldehyde from ethylene	2
K010	Distillation side cuts from the production of acetaldehyde from ethylene	2
K011	Bottom stream from the wastewater stripper in the production of acrylonitrile	1
K013	Bottom stream from the acetonitrile column in the production of acrylonitrile	1
K014	Bottoms from the acetonitrile purification column in the production of acrylonitrile	1
K023	Distillation light ends from the production of phthalic anhydride from naphthalene	3
K027	Centrifuge and distillation residues from toluene diisocyanate production	2
K028	Spent cutylist from the hydrochlorinator reactor in the production of 1,1,1-trichloroethane	2
K029	Waste from the product steam stripper in the production of 1,1,1-trichloroethane	2
K036[a]	Still bottoms from toluene reclamation distillation in the production of disulfoton	1
K038	Wastewater from the washing and stripping of phorate production	2

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[a] Only wastewaters are being regulated as a Second Third proposed waste, nonwastewaters were regulated as first third wastes.

Table 1-1 (Continued)

Waste code	Description	Original Third
K039	Filter cake from the filtration of diethylphosphorodithioil acid in the production of phorate	2
K040	Wastewater treatment sludge from the production of phorate	2
K043	2,6-Dichlorophenol waste from the production of 2,4-D	2
K093	Distillation light ends from the production of phthalic anhydride from ortho-xylene	3
K094	Distillation bottoms from the production of phthalic anhydride from ortho-xylene	3
K095	Distillation bottoms from the production of 1,1,1-trichloroethane	2
K096	Heavy ends from the heavy ends column from the production of 1,1,1-trichloroethane	2
K113	Condensed liquid light ends from the purification of toluenediamine in the production of toleunediamine via hydrogenation of dinitrotoluene	b
K114	Vicinals from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	b
K115	Heavy ends from the purification of toluenediamine in the production of toluenediamine via hydrogenation of dinitrotoluene	b
K116	Organic condensate from the solvent recovery column in the production of toluene diisocyanate via phosgenation of toluenediamine	b
P013	Barium cyanide	3
P021	Calcium cyanide	3

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[b] Newly listed hazardous wastes.

Table 1-1 (Continued)

Waste code	Description	Original Third
P029	Copper cyanides	2
P030	Cyanides (soluble cyanide salts), not elsewhere specified (t)	1
P039	Disulfoton(t); O,O-Diethyl S-[2-(ethylthio)ethyl] phosphorothioate(t)	1
P040	Phosphorothioic acid, O,O-diethyl O-pyrazinyl ester; O,O-Diethyl O-pyrazinyl phosphorothioate	2
P041	Diethyl-p-nitrophenyl phosphate; Phosphoric acid, diethyl-p-nitrophenyl ester	1
P043	Diisopropyl fluorophosphate; Fluoridic acid, bis(1-methylethyl) ester; Phosphorofluoridic acid, bis(1-methylethyl) ester	2
P044	Dimethoate (t); Phosphorodithioic acid, O,O-dimethyl S-(2(methylamino)-2-oxoethyl)ester (t)	2
P062	Hexaethyl tetraphosphate; Tetraphosphoric acid, hexaethyl ester	2
P063	Hydrocyanic acid; Hydrogen cyanide	1
P071	O,O-Dimethyl O-p-nitriphenyl phosphorothioate; Methyl parathion	1
P074	Nickel (II) cyanide; Nickel cyanide	2
P085	Diphosphoramide, octamethyl-; Octamethylpyrophosphoramide	2
P089	Parathion (t); Phosphorothioic acid,O,O-diethyl O-(p-nitrophenyl)ester (t)	1
P094	Phosphorothioic acid, O,O-diethyl S-(ethylthio)methyl ester (t); Phorate (t)	1
P097	Famphur; Phosphorothioic acid, O,O-dimethyl O-[p-((dimethylamino)-sulfonyl)phenyl]ester	1
P098	Potassium cyanide	2

Table 1-1 (Continued)

Waste code	Description	Original Third
P099	Potassium silver cyanide	3
P104	Silver cyanide	2
P106	Sodium cyanide	2
P109	Dithiopyrophosphoric acid, tetraethyl ester; Tetraethyldithiopyrophosphate	3
P111	Tetraethylpyrophosphate; Pryophosphoric acid, tetraethyl ester	2
P121	Zinc cyanide	3
U028	Bis(2-ethylhexyl)phthalate; 1,2-Benzenedicarboxylic acid, [bis(2-ethylhexyl)]ester	2
U058	2H-1,3,2-Oxazaphosphorine,2-[bis(2-chloroethyl)amino]-tetrahydro-2 oxide; Cyclophosphamide	2
U069	Dibutyl phthalate; 1,2-Benzenedicarboxylic acid, dibutyl ester	3
U087	Phosphorodithioic acid,0,0-diethyl-, S-methyl-ester; 0,0-Diethyl-S-methyl-dithiophosphate	3
U088	1,2-Benzenedicarboxylic acid, diethyl ester; Diethyl phthalate	3
U102	Dimethyl phthalate; 1-2-Benzenedicarboxylic acid, dimethyl ester	3
U107	Di-n-octyl phthalate; 1-2-Benzenedicarboxylic acid, di-n-octyl ester	2
U190	Phthalic anhydride; 1,2-Benzenedicarboxylic acid, anhydride	3
U221	Toluene diamine; Diaminotoluene	1
U223	Toluene diisocyanate (r,t); Benzene, 1,3-diisocyanantomethyl-(r,t)	1
U235	1-Propanol, 2,3-dibromo-,phosphate (3:1); Tris(2,3-dibromopropyl) phosphate	2

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2. CAPACITY ANALYSES RESULTS

This section presents general discussions of the source(s) of data and the methodology used for the capacity analyses in support of the Second Thirds proposed rule. Also presented are the results of the analyses of required and available capacity conducted for Second Thirds proposed wastes, as well as for previous rulemakings.

2.1 General Methodology

2.1.1 Data Set Development

(1) National Survey of Hazardous Waste Treatment, Storage, Disposal, and Recycling Facilities.

(a) Background. To improve the quality of data used for capacity analyses of hazardous waste volumes and management practices in support of the land disposal restrictions, EPA has conducted the National Survey of Hazardous Waste Treatment, Storage, Disposal, and Recycling Facilities (the TSDR Survey). The TSDR Survey was designed as a census of RCRA-permitted or interim status treatment, disposal, and recycling facilities, with no weighting factors for statistical analyses to project national estimates. The survey also included a sample of storage-only facilities. The survey results thus provide a comprehensive source of waste volumes and treatment, recovery, and disposal capacity data.

Only TSDR Survey data available as of October 1988, could be used to support the capacity analyses for this proposed rule. Receipt of the completed surveys was followed by extensive technical review and detailed analysis of the facility responses, including facility contact when necessary. Certain facility responses and data elements derived from the facility-level analysis were then incorporated into a specialized PC-based data set (a series of data systems) developed on land disposal facilities and commercial treatment and recovery facilities. (See Section 3 for a detailed discussion of the PC data set.)

(b) Schedule and status. The TSDR Survey was originally mailed to over 2,400 facilities in August 1987. Facilities were allowed 60 days to complete and return the surveys. Many facilities requested and were granted extensions of 30 days. Since August 1987, an additional 225 facilities that either were initially overlooked or are new have been identified and were sent the TSDR Survey. Over 2,500 facilities had returned their surveys as of October 1988, the deadline for review and analysis of data for support of this proposed rule.

A total of 475 facilities reported onsite land disposal/land placement of 63 billion gallons of RCRA hazardous wastes during 1986, the baseline year for the survey. All of these data (by land disposal volume) were reviewed and have been included in the data set used to support this proposed rule.

Six facilities with land disposal have not returned their surveys to date or did not provide sufficient land disposal data for inclusion in the data set. Some did provide limited information, however. These facilities total about 150 million gallons of land disposed waste. This accounts for only about 6 percent of the total volume of surface disposed wastes. The Agency is assuming that the wastes at these late- responding facilities will reflect patterns similar to those of the wastes reported; therefore, the Agency does not believe that inclusion of these facilities would have effected variance decisions for this proposed rule.

A total of 373 facilities with commercial treatment/recovery technologies have completed and returned surveys, accounting for a maximum of 14 billion gallons per year of commercial hazardous waste alternative capacity in 1988. Some of these facilities also reported land disposal onsite and are included among the 475 facilities noted above. However, the analysis was limited to those technologies considered as BDAT for, or judged to be applicable to, the wastes covered by this proposal.

One hundred and forty-six facilities reported having commercial processes other than combustion, mostly wastewater treatment capacity, that may be applicable as alternative treatment/recovery of Second Third proposed wastes, accounting for a maximum capacity of 2.5 billion gallons of commercial noncombustion treatment/recovery capacity in 1988.

Forty-seven facilities reported commercial combustion processes (incineration or reuse as fuel in industrial kilns) that may be applicable for burning hazardous waste currently being land disposed, accounting for a maximum capacity of 497 million gallons of commercial combustion capacity in 1988.

A total of 15 commercial treatment/recovery facilities have not returned their surveys to date. To fill known data gaps on these late facilities, a limited phone survey was attempted to gather critical capacity information; where available, other data sources were also used.

Of the various types of "reuse as fuel" units, only industrial kilns, not industrial boilers or other furnaces, were considered in the analysis of commercial combustion capacity.

(c) Technology capacity information. The TSDR Survey was designed to provide comprehensive information on all current and planned hazardous waste treatment, disposal, and recycling processes at all RCRA permitted and interim status facilities, including information on exempt processes at these facilities (e.g., recycling, wastewater treatment).* The baseline year for the survey was 1986. Information was requested on any planned changes to existing processes, including closures, and any new processes planned prior to 1992.

The survey included the following information on treatment and recycling processes, including those taking place in land placement units:

- General categories (including new or planned processes)
    - Type of process
    - Operating status
    - Commercial status
    - RCRA-permit status (exempt, interim status, final)
- Key parameters
    - Feed rates (by physical form)
    - Operating hours
    - Pollution controls
- Waste types
    - Waste codes managed in 1986
    - Restrictions or specifications for waste managed (for commercial facilities only)

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* Exceptions include totally enclosed treatment facilities (TETFs) and closed loop recycling (CLR), which were not required to be reported. Also, no information was gathered at facilities having exempt processes only.

• Capacity	- Maximum capacity (by physical - Utilization rate for 1986
- Planned changes	
• Residuals	- Quantity generated (by physical/ chemical form percent hazardous) - Further management
• Equipment (type of unit)	- Tanks - Containers - Thermal treatment units - Land placement units (i.e., surface impoundments, waste piles)

For more details, refer to the complete set of questionnaires and instructions in the RCRA docket (Ref. 5).

(d) Waste volumes land disposed. The TSDR Survey was also designed to provide detailed information on the types and quantities of all RCRA hazardous waste managed, by specific land disposal/land placement practices, at all RCRA-permitted and interim status facilities. The survey provides limited but adequate characterization data (refer to Section 3.1.2) to assess the treatability potential of the wastes and to identify applicable alternative treatment/recovery technologies, including:

- RCRA waste code (or codes, if more than one is applicable);
- Waste description (physical/chemical form and qualitative information on hazardous constituents);
- Industry description (general description delineating the industries that generated each type of waste at a facility);
- Quantity that entered land disposal/placement in 1986; and
- Residual information (whether this waste was actually a residual from onsite hazardous waste management operations).

The TSDR Survey also provides valuable information on the individual units in which land disposal/placement is occurring, including plans for closures and upgrading/retrofitting to meet the minimum technology requirements. Through review of the questionnaire responses and the facility schematics, it is possible to track individual waste streams managed in more than one type of land disposal unit or managed by more than one process (treatment, storage, or disposal) in surface impoundments and waste piles, to avoid double-counting of waste volumes. The information gathered included:

• General categories	- Type of process - Permit status (interim status, final) - Commercial status - Operating status - Closure plans
• Key parameters	- Liner type (plans for upgrading) - Pollution controls
• Waste types	- Waste types and quantities managed in 1986 - Restrictions or specifications for waste managed (for commercial facilities only)
• Capacity	- Design capacity - Utilization rate for 1986 - Remaining capacity - Planned changes
• Residuals	- Quantities of effluents and dredged solids - Further management

For more details, refer to the complete set of questionnaires (Ref. 5).

(e) Overview of data handling, technical review, and quality assurance. Extensive technical review of TSDR Survey data was required to ensure completeness, consistency, and accuracy on a per-facility basis. To achieve this goal, the review process was designed to promote the consistent and efficient identification and resolution of any errors, inconsistencies, and omissions, including any required facility followup. The review procedures were comprehensive and required the consideration and analysis of the facility responses to essentially every question in the survey (if applicable to that facility), as well as the review of general and detailed schematics of all onsite hazardous waste management operations. The detailed review procedures are presented in the Technical Review Procedures for the TSDR Survey (Ref. 6).

All surveys from TSDR facilities with onsite land disposal/placement (whether private or commercial) or commercial treatment/recovery operations were considered critical for support of the land disposal restrictions. Therefore, they were categorized as "priority" surveys and were slated to undergo immediate technical review and analysis. Following review, if the responses in a survey indicated that the facility had onsite land disposal/placement, the required PC data sheets were completed immediately and the survey package underwent a preliminary quality control (QC) review by the review team leaders. If no land disposal/placement operations were indicated, the review of commercial treatment/recovery operations proceeded, and a capacity analysis was completed (as described in Section 3.2); upon completion, the survey package went to the team leaders for preliminary QC. As part of this preliminary QC, the team leader then worked with the reviewer to correct or resolve any problems identified during the survey review. (See Ref. 6 for details on the survey screening, distribution, and review procedures.)

Treatability assessments of each land disposed waste stream were then conducted as described in Section 3.1.2.

The last step in the review process consisted of complete or final QC. Approximately 25 percent of the surveys underwent complete QC. (See Ref. 7 for detailed information on QC procedures.) After QC, either preliminary or complete, the technical review/analysis was considered to be complete.

(2) Other data sources. The TSDR Survey was used as the primary source of data on the volumes and characteristics of wastes land disposed, and on treatment/recovery capacity to support the land disposal restrictions under this proposed rule. Additional data sources were used only when necessary to fill obvious data gaps in the TSDR Survey. These sources were used to provide supplemental data for facilities that were late in responding to the survey or for facilities that had provided incomplete responses and either would not or could not assist in completing the responses. One such data source is EPA's Office of Drinking Water's (ODW's) Hazardous Waste Injection Well Data Base (HWIWDB). The HWIWDB was used to estimate the volume of some underground injected wastes for which the TSDR Survey did not have data (Ref. 8).

In the few cases in which a BDAT technology was not directly applicable (or applicable without pretreatment), wastes were assigned to other potentially applicable technologies or combinations of technologies, (i.e., treatment trains) judged to be capable of meeting the treatment standards for certain wastes with unique characteristics. In such cases (for unique treatability groups), various sources of published literature were used (as described in Section 3.1.2), and engineering judgment was used when necessary. Except for these few unique waste streams, the BDAT program provided the information on the ability of technologies to meet the treatment standards for the wastes of concern.

2.1.2 Capacity Analysis Methodology

This section presents a brief description of the Agency's capacity analysis methodology, as well as any modifications required for the analysis of Second Third proposed wastes. A detailed explanation of the generic methodology is contained in Section 3.

To assess capacity requirements, an analysis comparing required capacity with available capacity is performed. The following sections briefly describe how required and available capacities were determined.

(1) Required capacity. The required capacity, or capacity demand, consists of those volumes of wastes currently land disposed that will require alternative treatment or recovery when they are restricted from land disposal, and also considers the residuals generated by treatment of these wastes. The waste streams potentially affected by the land

disposal restrictions were identified by land disposal management practice, including treatment, storage, or disposal in a surface impoundment; treatment or storage in a waste pile; land treatment; and disposal in a landfill or an underground injection well. Unlike the previous land disposal restrictions in which underground injected wastes were considered under a separate rulemaking, both surface disposed and underground injected wastes are included in today's proposal.

Salt dome formations, salt bed formations, and underground mines and caves are additional methods of land disposal that are affected by this rulemaking. Since insufficient information is available to document the volume of wastes disposed of by these three methods, they are not addressed in the analysis of volumes and required alternative capacity.

The volumes of waste reported in the TSDR Survey as land disposed in 1986 that require alternative treatment/recovery capacity were adjusted to reflect the fact that treatment in surface impoundments after November 1988 may be conducted only in impoundments meeting minimum technological requirements. Volumes of waste that were reported as continuing to be treated in non-minimum technology surface impoundments were considered to require alternative treatment capacity, while those undergoing treatment in impoundments meeting the requirements in 1988 or in impoundments being replaced by tank systems by 1988 were dropped from further analysis. The waste volumes requiring alternative capacity were identified by RCRA waste code(s) and by their land disposal ban regulatory status (i.e., solvents and dioxins, First Thirds, Second Thirds, Third Thirds, and California List). A detailed discussion of this methodology is presented in Section 3.1.1.

To determine the type of alternative capacity required by the affected wastes, a treatability analysis was performed on each waste stream. Using the waste code, the physical/chemical form data, and considering the identified BDAT technologies, wastes were placed into treatability groups. For example, all wastes requiring sludge incineration would be placed in the same treatability group. The physical/chemical form data were provided by the facility using qualitative technical criteria, not regulatory definitions. For example, liquid wastes were identified as "highly fluid" rather than as "wastes failing the Paint Filter Liquids Test."

Waste groups (i.e., waste streams described by more than one waste code) present special treatability concerns because they are often contaminated with wastes requiring different treatment (e.g., organics and metals). To treat these wastes, a treatment train must be developed that can treat all waste types in the group. A more detailed description of the treatability analysis methodology, including treatment train development, is presented in Section 3.1.2.

During the comment period for previous rulemakings, a number of commenters wondered if the Agency included landfill leachate wastes in its estimates of required capacity. Leachates were identified in the survey in one of two ways--either by RCRA waste code with a waste description code* identifying the waste as a leachate or by using an X-code specifically created for "leachate from hazardous waste landfills," XLEA. Wastes described by a RCRA waste code were handled like any other waste. A different methodology was used for X-codes including XLEA, however.

X-codes were created for two basic kinds of wastes in the TSDR Survey: (1) wastes considered hazardous by some State or Federal regulation but not by RCRA (e.g., PCBs and asbestos) and (2) hazardous waste residuals from onsite hazardous waste management operations. The second group of X-codes included an "XLEA" code defined as "leachate from hazardous waste landfills." The instructions for the survey told respondents to use the XLEA and other X-codes "to describe hazardous waste residuals that result from the onsite management of many individual RCRA coded wastes which are no longer individually identifiable."

During treatability analysis conducted following the technical review of the survey (treatability analysis was conducted on land disposed waste streams only), an attempt was made to "un-X" any X-coded wastes, including XLEA, by assigning RCRA codes. In the case of XLEA, information from the facility schematic, from facility notes, and on the wastes entering the landfill was used in an attempt to assign RCRA codes to these wastes. However, because by definition these wastes no longer should be individually identifiable, it was possible to assign RCRA waste codes to only a few of these X-coded wastes.

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* Respondents to the TSDR Survey were asked to describe each land disposed waste stream using a waste code(s) and to select an applicable waste description code from a list provided in the survey. A copy of this list of waste description codes is contained in Appendix C. One of the available codes, B16, was specifically for leachate.

Furthermore, an analysis was conducted of the land disposed volumes of XLEA wastes that could not be un-Xed in order to assess the potential impact of these wastes on the land disposal restrictions. The analysis showed that only a small volume of XLEA waste was surface land disposed after excluding wastes that were managed in surface impoundments which have since been replaced by tanks or which have received a variance from the minimum technology requirements. About 165,000 gallons of leachate described by XLEA was landfilled in 1986. Of this amount, 4,800 gallons was a contaminated soil that had received a capacity variance. In addition, about 300,000 gallons was land treated and will require alternative treatment/recovery. However, these relatively small volumes, only about 400,000 gallons in all, would not have influenced any of the proposed capacity variance decisions.

The volume of underground injected XLEA waste, although considerably larger (about 5.4 million gallons), was a relatively small amount compared to the total volume of solvent, California List, and First Third underground injected wastes. Furthermore, the vast majority of these wastes have already been granted a capacity variance. Consequently, these volumes of X-coded leachate wastes have not been included in the Agency's estimates of required capacity.

A number of the treatment technologies to which wastes have been assigned create treatment residuals that will require further treatment prior to land disposal (e.g., stabilization of incinerator ash). In these cases, the Agency has estimated the amount of residuals that would be generated by treatment of the original volume of waste requiring treatment, and has included these residuals in the volumes requiring treatment capacity. A more detailed description of the determination of residual volumes is presented in Section 3.1.2(4).

For a number of wastes, BDAT includes treatment of incinerator scrubber water. Based on TSDR Survey responses, the RCRA-permitted incinerators have adequate air pollution control devices (APCDs) (including scrubber water treatment at those facilities with wet scrubbers), and therefore no additional analysis of the volume of scrubber water was made. However, if the resultant scrubber water treatment sludge would likely require further treatment (e.g., stabilization), an estimate of these volumes was included.

(2) Available capacity. To obtain estimates of available capacity that could be compared with the capacity requirements of affected wastes, a "systems" analysis approach was taken. For this analysis, a system is defined as one or more different processes used together in one or more different units to treat or recover hazardous waste. The capacity of the treatment/recovery system may be limited by the capacity of one or more of the unit processes within the system. The available capacity of the

system is determined by subtracting the utilized capacity of the system from the maximum capacity of the system. A detailed discussion of system capacity determination can be found in Section 3.2.2.

Comparing required capacity with available capacity begins at the facility level and moves to the national level as dictated by the available capacity and commercial status of applicable treatment/recovery systems. The available capacity of systems identified as private is considered only when it is BDAT for the wastes reported as being land disposed at that facility. Waste volumes assigned to onsite BDAT technologies are not considered in the national totals of required capacity.

The remaining volumes of waste still requiring treatment capacity are added to determine the national demand for commercial capacity of each alternative technology. Consequently, all estimates of capacity presented in this document represent commercially available (not private) capacity.

By comparing the required capacity with the available commercial capacity, the Agency can identify capacity shortfalls and make determinations concerning variances. The comparative capacity analysis accounts for the sequential and cumulative effects of previous land disposal restrictions, capacity variances, and for projected capacity changes after 1986 (the baseline year). Solvents and dioxin wastes were assigned to available capacity first, followed by First Third promulgated wastes, California List HOCs (other than those that are also First Third promulgated wastes), underground injected wastes, and finally Second Third proposed wastes. In addition, available capacity was first assigned to all affected wastes land disposed in "surface" units (i.e., waste piles, surface impoundments, landfills, and land treatment, but not underground injection wells), and then to underground injected wastes. The Agency believes that land disposal in surface units may represent a greater threat to human health and the environment than does the underground injection of wastes.

2.2 Results

The following sections present the results of the capacity analyses conducted for this and previous rulemakings. As mentioned earlier, because land disposed wastes capable of being treated onsite in a BDAT system have not been included in the estimates of required capacity, only commercially available capacity is presented in this document. In addition, the amount of commercial capacity available for each rulemaking considers the amount used by previous rulemakings.

2.2.1 All RCRA Wastes

Table 2-1 presents estimates of the volumes of RCRA wastes that are surface land disposed annually. These volumes were compiled by adding all waste stream volumes managed by treatment, storage, or disposal in surface land disposal units. Separate waste volumes are shown for storage and treatment in waste piles; treatment, storage, and disposal in surface impoundments; and disposal in landfills and land treatment units. The baseline data for determining the volumes in Table 2-1 were

Table 2-1 Overview of All Surface Land Disposed RCRA Hazardous Waste

	Land-disposed volume[a] (million gallons/year)
Storage only	
- Waste piles	92
- Surface impoundments	126
Treatment	
- Waste piles	63
- Surface impoundments	1,521
Disposal	
- Landfills	600
- Land treatment	83
- Surface impoundments	218
Total	2,703

[a] Baseline was TSDR Survey data for 1986 (facility responses as of August 1988), adjusted for volumes of waste managed in surface impoundments that will be replaced by tanks or treatment impoundments retrofitted to meet minimum technology requirements.

the 1986 data from responses to the TSDR Survey. Data reported in tons were converted to gallons (using the conversion factor of 240 gallons/ton, based on the density of water), to allow comparisons to available capacity in a standard unit. These reported 1986 volumes were adjusted by subtracting the volumes of waste managed in treatment surface impoundments that have undergone closure and have been replaced by tanks or that have been retrofitted to meet minimum technology requirements.

To avoid double-counting of wastes that underwent more than one management operation in the same type of unit (e.g., storage and treatment in a waste pile), the following procedures were used. In tabulating volumes of waste managed in surface impoundments and waste piles, any wastes that underwent treatment in an impoundment or waste pile were reported in the "treatment" volume. Wastes stored in a surface impoundment or waste pile that never underwent treatment in the impoundment or waste pile were reported in the "storage only" volumes. In tabulating surface impoundment volumes, wastes that were disposed of in surface impoundments but not also treated in the impoundment were included among "disposal" surface impoundment volumes.

Not represented in the estimates presented in Table 2-1 are volumes of surface land disposed waste from facilities that did not return their TSDR Surveys before October 1988, or did not provide sufficient data on land disposal. Based on limited information provided by these facilities, EPA estimates that these facilities accounted for approximately 150 million gallons of land disposed waste in 1986. This represents less than 6 percent of the reported 1986 volumes of surface land-disposed hazardous waste. Sufficient data were not available to determine specific management practices and RCRA waste codes associated with these volumes.

2.2.2 Solvents

For the First Thirds final rule, EPA performed a reanalysis of required and available treatment capacity for surface land disposed solvent wastes (Ref. 4). This section summarizes the results of that analysis. The First Thirds final rule did not include a capacity analysis for underground injected wastes. A capacity analysis for underground injected wastes was performed for a separate rulemaking.

Table 2-2 presents estimates of the volume of solvents that are surface land disposed annually, by management practice and by type of land disposal unit. The same procedures described for the analysis of all RCRA wastes were used for estimating solvent volumes. The entire volume of any waste stream, for both single waste streams and waste groups (waste described by more than one waste code), was considered if the waste stream contained any solvent wastes.

The volume of surface land disposed solvent wastes requiring alternative commercial treatment capacity is less than the volume of solvents land disposed. This is because the Agency has assumed that the 13 million gallons of solvent wastes that were only stored in impoundments or waste piles do not require alternative treatment capacity (although they may require alternative storage capacity) because they are

Table 2-2 Overview of Surface Land Disposed Solvent Wastes

	Land-disposed volume[a] (million gallons/year)
Storage only	
- Waste piles	2
- Surface impoundments	11
Treatment	
- Waste piles	3
- Surface impoundments	<1
Disposal	
- Landfills	71
- Land treatment	<1
- Surface impoundments	26
Total	113

[a] Baseline was TSDR Survey data for 1986 (facility responses as of August 1988), adjusted for volumes of waste managed in surface impoundments that will be replaced by tanks or treatment impoundments retrofitted to meet minimum technology requirements.

treated or disposed elsewhere. Furthermore, the facility-level waste treatability and technology capacity analyses conducted on solvent wastes being land disposed determined that 34 million gallons of these wastes either had already been treated using the BDAT technology or could be treated onsite, and therefore were not included in the volumes requiring alternative commercial treatment/recovery capacity. Based on this, the Agency estimates that 66 million gallons of solvent wastes will require alternative treatment/recovery capacity on a commercial basis. This volume includes 25 million gallons of soil; therefore, it is estimated that only 41 million gallons of nonsoil solvent wastes will require alternative commercial treatment capacity. Finally, the Agency estimates that treatment of this 41 million gallons will generate 4 million gallons of waste residuals that will also require additional alternative treatment capacity.

Table 2-3 presents the estimates of available national commercial capacity for the alternative technologies that are applicable to solvent wastes. Also presented are the estimates of annual surface land disposed waste volumes that require alternative commercial capacity based on the facility-level treatability and capacity analyses (not including contaminated soils or underground injection wastes). As evident from the table, the Agency determined that based on the new data available from results of the TSDR Survey, there was adequate capacity for all of the solvent wastes that will require alternative capacity (Ref. 4).

Table 2-3 Solvent Capacity Analysis

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)
Combustion		
- Liquids	275	1
- Sludges/solids	47	38
Stabilization of incinerator ash	499	4
Wastewater treatment		
- Cyanide oxidation, chemical precipitation, and settling/filtration	159	<1
- Steam stripping, carbon adsorption, biological treatment, or wet air oxidation	66	2

2.2.3 Nonsolvent RCRA Wastes Containing Halogenated Organic Compounds (HOCs)

For the First Thirds final rule, EPA performed a reanalysis of required and available treatment capacity for California List HOCs (Ref. 4). This section summarizes the results of that analysis. The First Thirds final rule did not include a capacity analysis for underground injected wastes. A capacity analysis for underground injected wastes was performed for a separate rulemaking.

Tables 2-4 through 2-6 present estimates of annual surface land disposed volumes for nonsolvent RCRA wastes that are potential California List wastes containing HOCs at concentrations of 1,000 mg/kg or greater. Separate tables are presented for total HOC wastes, HOC wastes that are also First Third promulgated wastes, and all other HOC wastes. The same procedures used for tabulating all RCRA wastes apply to HOC volumes. However, the total volume for each management practice in Tables 2-4 through 2-6 represents the sum of all single HOC waste streams (in that table's regulatory group) and all waste groups containing at least one potential HOC and a waste in that table's regulatory group but containing no solvents.

The volume of land disposed HOC wastes requiring alternative commercial treatment capacity is less than the volume of HOC wastes land disposed. This is because the facility-level treatability and capacity analyses conducted on the HOC wastes being land disposed determined that 3 million gallons of these wastes could be treated onsite and, therefore, were not included in the volume requiring alternative commercial

Table 2-4 Overview of Surface Land Disposed Potential California List Wastes Containing Halogenated Organic Compounds

	Land-disposed volume[a] (million gallons/year)
Storage only	
- Waste piles	1
- Surface impoundments	<1
Treatment	
- Waste piles	7
- Surface impoundments	6
Disposal	
- Landfills	20
- Land treatment	<1
- Surface impoundments	<1
Total	34

[a] Baseline was TSDR Survey data for 1986 (facility responses as of August 1988), adjusted for volumes of waste managed in surface impoundments that will be replaced by tanks or treatment impoundments retrofitted to meet minimum technology requirements.

Table 2-5 Overview of Surface Land Disposed Promulgated First Third Wastes Containing Halogenated Organic Compounds

	Land-disposed volume[a] (million gallons/year)
Storage only	
- Waste piles	1
- Surface impoundments	<1
Treatment	
- Waste piles	7
- Surface impoundments	<1
Disposal	
- Landfills	8
- Land treatment	<1
- Surface impoundments	<1
Total	16

[a] Baseline was TSDR Survey data for 1986 (facility responses as of August 1988), adjusted for volumes of waste managed in surface impoundments that will be replaced by tanks or treatment impoundments retrofitted to meet minimum technology requirements.

Table 2-6 Overview of All Other Surface Land Disposed Wastes Containing Halogenated Organic Compounds

	Land-disposed volume[a] (million gallons/year)
Storage only	
- Waste piles	<1
- Surface impoundments	<1
Treatment	
- Waste piles	<1
- Surface impoundments	6
Disposal	
- Landfills	12
- Land treatment	<1
- Surface impoundments	<1
Total	18

[a] Baseline was TSDR Survey data for 1986 (facility responses as of August 1988), adjusted for volumes of waste managed in surface impoundments that will be replaced by tanks or treatment standards retrofitted to meet minimum technology requirements.

treatment capacity. Based on this, the Agency estimates that 15 million gallons of HOC wastes will require alternative treatment capacity on a commercial basis. This volume includes 6 million gallons of soil, which are discussed in a separate section of the document (2 million gallons of HOC soils were assigned to onsite treatment); therefore, it is estimated that only 9 million gallons of nonsoil HOC wastes will require alternative commercial treatment capacity.

Table 2-7 presents the results of the facility-level treatability and capacity analyses for HOC-containing wastes (not including underground injection waste volumes). To eliminate double-counting, this table does not include wastes that contain First Third promulgated wastes or solvents.

Based on the data from the TSDR Survey, the Agency determined that adequate capacity exists for the volume of HOC wastes requiring combustion. Consequently, the Agency rescinded the national capacity variance previously granted to these wastes (Ref. 4).

2.2.4 First Third Wastes

In support of the First Thirds final rule, EPA performed facility level treatability and capacity analyses on First Third waste streams (Ref. 4). This section documents the results of the capacity analysis for First Third wastes. As previously mentioned, the First Thirds final rule did not include underground injected wastes.

Table 2-7 Capacity Analysis for HOC Wastes
(Excluding First Third Proposed HOCs)

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)
Combustion		
- Liquids	274	<1
- Sludges/solids	9	2
Wastewater treatment (for organics)	64	7

(1) All First Third wastes. Table 2-8 presents the estimates of all First Third wastes (as listed in 40 CFR 268.10) that are surface land disposed annually, by management practice and by type of disposal unit. The total volume for each category in Table 2-4 represents the sum of all single First Third waste streams and all waste groups containing at least one First Third waste but no solvents. This prevents double-counting of multiple waste streams that contain both First Third wastes and solvents.

(2) First Third wastes for which formal treatment standards have been promulgated. Table 2-9 presents estimates of the annual volume of First Third wastes surface land disposed for which treatment standards were promulgated, by management practice and by type of disposal unit. These wastes are referred to hereafter as First Third promulgated wastes. The same procedures described for the analysis of all RCRA wastes were used for estimating First Third promulgated waste volumes. The total volume for each category in Table 2-8 represents the sum of all single First Third promulgated waste streams and all waste groups containing at least one First Third promulgated waste but no solvents. This prevents double-counting of multiple waste streams that contain First Third promulgated wastes and solvents.

The volume of land disposed First Third promulgated wastes requiring alternative commercial treatment capacity is less than the volume of First Third promulgated wastes land disposed. This is because the Agency has assumed that 35 million gallons of the 45 million gallons that were only stored in impoundments or waste piles do not require alternative

Table 2-8 Overview of All Surface Land Disposed First Third Wastes

	Land-disposed volume[a] (million gallons/year)
Storage only	
- Waste piles	49
- Surface impoundments	6
Treatment	
- Waste piles	29
- Surface impoundments	328
Disposal	
- Landfills	302
- Land treatment	76
- Surface impoundments	71
Total	861

[a] Baseline was TSDR Survey data for 1986 (facility responses as of August 1988), adjusted for volumes of waste managed in surface impoundments that will be replaced by tanks or treatment impoundments retrofitted to meet minimum technology requirements.

Table 2-9 Overview of Surface Land Disposed First Third Promulgated Wastes[a]

	Land-disposed volume[b] (million gallons/year)
Storage only	
- Waste piles	41
- Surface impoundments	4
Treatment	
- Waste piles	27
- Surface impoundments	320
Disposal	
- Landfills	274
- Land treatment	76
- Surface impoundments	70
Total	812

[a] First Third promulgated wastes are those wastes for which treatment standards were finalized on August 8, 1988.

[b] Baseline was TSDR Survey data for 1986 (facility responses as of August 1988), adjusted for volumes of waste managed in surface impoundments that will be replaced by tanks or treatment impoundments retrofitted to meet minimum technology requirements.

treatment capacity (although they may require alternative storage capacity) because they are treated or disposed elsewhere. The 10 million gallons of "stored only" wastes that do require alternative capacity were determined to have undergone "long-term storage" and therefore would not have been reported elsewhere as treated or disposed. Furthermore, the facility-level waste treatability and technology capacity analyses conducted on First Third wastes being land disposed determined that 341 million gallons of these wastes either had already been treated using the BDAT technology or could be treated onsite and therefore do not require alternative commercial treatment capacity. This volume includes 290 million gallons of wastewater from one facility assigned to onsite dewatering in tanks.

Table 2-10 presents estimates of national capacity for the alternative technologies applicable to the First Third promulgated wastes. Also presented are the estimates of annual land disposed waste volumes requiring alternative commercial capacity, excluding First Third promulgated wastes that are underground injected, or soils contaminated with First Third promulgated wastes. In most cases, adequate capacity was available to treat all of the First Third promulgated wastes and mixed waste groups containing a First Third promulgated waste.

As Table 2-10 shows, four technologies had required capacity (demand) exceeding the available capacity (supply): acid leaching of sludges, high temperature metals recovery, solvent extraction, and combustion of

Table 2-10 1988 Capacity Analysis for First Third Promulgated Wastes

Technology	Available capacity (million gal/yr)	Required commercial capacity (million gal/yr)
Combustion		
- Liquids	274	<1
- Sludges/solids	7	6 - 160[a]
Stabilization	495	231[b]
Solvent extraction	1	0 - 154
Metals recovery		
- High temperature metals recovery (not secondary smelting)	34	62
Wastewater treatment		
- Chromium reduction, chemical precipitation, and settling/filtration	260	40
- Carbon adsorption and chromium reduction, chemical precipitation, and settling/filtration	12	1
Sludge Treatment		
- Acid leaching, chemical oxidation, and dewatering of sludge and sulfide precipitation of effluent	0	4

[a] 6 million gallons of non-K048-K052 wastes require sludge/solids combustion. Amount of K048-K052 sludge/solids requiring combustion may be as much as 154 million gallons. The alternative BDAT technology for these wastes is solvent extraction.

[b] This volume includes 62 million gallons of "high zinc" K061 also assigned to high temperature metals recovery.

sludges/solids. Therefore, because BDAT for K071 was identified as acid leaching of the sludge, the Agency granted a 2-year national capacity variance for K071 wastes.

High temperature metals recovery (HTMR) was identified as the BDAT for "high zinc" K061 (i.e., K061 containing ≥15 percent zinc). Therefore, the Agency granted a 2-year capacity variance to the HTMR standard for high zinc K061. However, during this 2-year variance period, the Agency is requiring that high zinc K061 meet the standard for low zinc K061, which is based on stabilization. Therefore, 62 million gallons of K061 waste have been "double-counted" on Table 2-10 under both stabilization and HTMR.

The required capacity for the combustion of sludges/solids was divided into two numbers: the total amount of waste that requires sludge/solid combustion, 160 million gallons, and the amount of First Third promulgated waste other than K048-K052 waste that requires sludge/solids combustion, 6 million gallons. The BDAT standard for K048-K052 was also based on solvent extraction; however, and therefore, the required capacities for these technologies are presented as ranges on Table 2-10. The total volume of K048-K052 wastes requiring capacity has been determined to be 154 million gallons. Consequently, because of a shortfall of sludge/solids incineration and solvent extraction capacity, the Agency granted a 2-year national capacity variance for K048-K052 wastes.

(3) Soft hammer First Third wastes. Table 2-11 presents estimates of annual surface land disposed volumes for "soft hammer" First Third wastes, by management practice and by type of disposal unit. These are the First Third wastes for which treatment standards have not yet been promulgated (i.e., soft hammer First Third wastes). The same procedures described for the analyses of all RCRA wastes were used for estimating soft hammer First Third waste volumes. The total volume for each category in Table 2-11 represents the sum of all single, First Third soft hammer waste streams and all waste groups containing at least one First Third soft hammer waste, but no First Third promulgated wastes or solvents. This prevents double-counting of multiple waste streams that contain First Third soft hammer wastes, First Third promulgated wastes, and solvents.

2.2.5 Second Third Proposed Wastes

(1) Overview. The Agency is today proposing its regulatory approach for Second Third wastes. As previously mentioned, however, the Agency is not proposing standards for all Second Third wastes at this time, but instead is proposing to allow the soft hammer requirements to take effect for those Second Third wastes for which standards are not now being proposed. In addition, the Agency is today proposing treatment standards for some "soft hammer" First Third wastes as well as some wastes that were originally Third Third wastes. Those wastes for which the Agency is today proposing treatment standards are listed in Table 1-1. These

Table 2-11 Overview of Surface Land Disposed Soft Hammer First Third Wastes[a]

	Land-disposed volume[b] (million gallons/year)
Storage only	
- Waste piles	8
- Surface impoundments	2
Treatment	
- Waste piles	2
- Surface impoundments	7
Disposal	
- Landfills	28
- Land treatment	<1
- Surface impoundments	1
Total	48

[a] The First Third wastes for which treatment standards were not finalized in the First Third final rule.

[b] Baseline was TSDR Survey data for 1986 (facility responses as of August 1988), adjusted for volumes of waste managed in surface impoundments that will be replaced by tanks or treatment impoundments retrofitted to meet minimum technology requirements.

wastes will hereafter be referred to as Second Third proposed wastes. Waste code-specific capacity analyses for the Second Third proposed wastes are presented in Section 2.2.6. Today's proposed rule also includes capacity analyses for underground injected Second Third proposed wastes.

Table 2-12 presents estimates of the volume of Second Third proposed wastes land disposed annually, by management practice and by type of land disposal unit. These estimates include the entire volume of any waste stream, for both single waste streams and waste groups, if the waste stream contained any Second Third proposed waste but no solvent, First Third waste for which a standard has been finalized, or California List HOC wastes. The estimate also includes volumes for waste streams containing soft hammer First Third wastes for which standards are being proposed today. The volumes for these wastes have thus been counted in Table 2-12 as well as in Table 2-11.

The volume of land disposed Second Third proposed wastes requiring alternative commercial treatment capacity is less than the volume of Second Third proposed wastes land disposed. This is because the Agency has assumed that 12 million gallons of the 14 million gallons that were only stored in impoundments or waste piles do not require alternative treatment capacity (although they may require alternative storage capacity) because they are treated or disposed elsewhere. The 2 million gallons of "stored only" wastes that do require alternative capacity were determined to have undergone "long-term storage" and therefore would not

Table 2-12 Overview of Second Third Proposed Wastes[a]

	Land disposed volume[b] (million gal/yr)
Storage only	
- Waste piles	9
- Surface impoundments	5
Treatment	
- Waste piles	6
- Surface impoundments	<1
Disposal	
- Landfills	17
- Land treatment	<1
- Surface impoundments	<1
- Underground injection	1,657
Total	1,695

[a] Second Third proposed wastes are those wastes for which standards are being proposed today and include some soft hammer First Third and Third Third wastes.

[b] Baseline was TSDR Survey data for 1986 (facility responses as of August 1988), adjusted for volumes of waste managed in surface impoundments that will be replaced by tanks or treatment impoundments retrofitted to meet minimum technology requirements.

have been reported elsewhere as treated or disposed (for mor detail on "stored only" waste volumes see Section 3.1.1). Furthermore, the facility-level waste treatability and technology capacity analyses conducted on Second Third proposed wastes being land disposed determined that 96 million gallons of these wastes either had already been treated using the BDAT technology or could be treated onsite and therefore do not require alternative commercial treatment capacity.

Based on this analysis, the Agency estimates that 1,586 million gallons of Second Third proposed wastes will require alternative commercial treatment capacity. This volume includes 2 million gallons of soils, which are discussed in a separate section of this document; therefore, it is estimated that 1,584 million gallons of nonsoil Second Third proposed wastes will require alternative commercial treatment capacity. Finally, the Agency estimates that treatment of the 1,584 million gallons will generate 12 million gallons of waste residuals that will require additional alternative treatment capacity.

(2) Surface disposed Second Third wastes. Table 2-13 presents the estimates of available national commercial capacity applicable to surface disposed Second Third proposed wastes. The amount of available commercial capacity presented is that amount remaining after accounting for surface land disposed and underground injected spent solvent, California List HOC, and First Third wastes previously restricted. In addition, the amount of available sludge/solids combustion capacity has

Table 2-13 1988 Capacity Analysis for Surface Disposed Second Third Proposed Wastes[a]

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)
Combustion		
- liquid	216	<1
- sludges/solids	76[b]	8
Wastewater treatment		
- cyanide destruction	91	5
Stabilization	264	9
Secondary smelting	52	1

[a] Volumes do not include underground injected waste and soils/debris.

[b] Includes capacity planned to be available prior to promulgation of the final rule.

been adjusted to include capacity planned to be available prior to promulgation of the final rule (June 1989), and therefore, sludge/solids combustion capacity is larger than in previous tables in this section.

Table 2-13 also shows the estimates of the volume of surface land disposed Second Third proposed wastes that will require alternative commercial treatment recovery capacity as a result of today's proposed rule (i.e., required capacity excluding soil and debris). These estimates are based on the results of the TSDR Survey.

A comparison of required and available treatment/recovery capacity shows adequate capacity for all surface disposed Second Third proposed wastes affected by today's proposed rulemaking. Therefore, the Agency is not proposing to grant a national capacity variance to any surface disposed Second Third proposed wastes. Section 2.2.6 contains a detailed capacity analysis for each Second Third proposed waste code.

(3) Underground injected Second Third wastes. Table 2-14 presents the amount of required and available commercial treatment recovery capacity for underground injected wastes affected by today's proposed rule. The amount of available commercial capacity presented is that amount remaining after accounting for surface disposed Second Third wastes. The amount of available commercial capacity and most of the required capacity were estimated using the TSDR Survey. For some waste codes for which the TSDR Survey did not contain data on the volume being underground injected, the Agency used the Office of Drinking Water's

Table 2-14 1988 Capacity Analysis for Underground Injected Second Third Proposed Wastes

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)
Combustion		
- liquid	216	373
Wastewater treatment		
- cyanide destruction	96	127
- wet air oxidation and biological treatment	0	957
- steam stripping and/or biological treatment	57	109
- carbon adsorption	2	<1
- chromium reduction and chemical precipitation	220	<1
Stabilization	255	7

(ODW's) Hazardous Waste Injection Well Database (HWIWDB) to estimate the volume of these wastes injected (Ref. 8). Wastes for which this data base was used are identified in Section, 2.2.6.

The table shows shortfalls in available capacity for cyanide destruction, incineration, and wastewater treatment of organics. Treatment standards based on cyanide destruction are today being proposed for F007, F008, F009, F011, F012, F019, P013, P021, P029, P030, P063, P074, P098, P099, P104, P106, and P121 wastes. EPA estimates that about 127 million gallons per year of underground injected Second Third proposed wastes will require cyanide destruction. However, one F007 waste stream accounts for 126 million gallons per year of the required capacity. Excluding this stream, adequate capacity exists to treat the remainder of these wastes. Consequently, of the waste requiring cyanide destruction, the Agency is today proposing a national capacity variance only for F007 wastes, which are underground injected. However, because F007 waste was originally scheduled as a First Third waste, the maximum extension available is until August 8, 1990.

P063 wastes were reported in the TSDR Survey as part of mixed waste streams with K011 and K013 wastes. When mixed waste streams are reported and no breakdown of the volumes of the component wastes is given, the total volume is assumed to be divided equally among the components. This results in 184 million gallons being attributed to P063. The Agency believes that this is an extremely large volume for this waste code and that the actual volume of P063 is much lower. As a result, EPA is not proposing to grant a capacity variance to P063. However, the Agency is soliciting comments on the volumes and characteristics of any P063 wastes being injected. Any new information will be evaluated and used in making a final determination on the need for a capacity extension for this waste.

The treatment standard for K009 and K010 nonwastewaters is based on incineration; for wastewaters it is based on steam stripping and/or biological treatment. In the capacity analysis for K009 and K010 wastes, only wastewaters were identified as requiring alternative treatment. Table 2-14 shows that insufficient wastewater treatment capacity exists for the volume of these wastes that are underground injected. The Agency is therefore proposing to grant a 2-year national capacity variance to underground injected K009 and K010 wastes.

The treatment standard for K011, K013, and K014 nonwastewaters is based on incineration; for wastewaters it is based on wet air oxidation followed by biological treatment. Table 2-14 shows that insufficient capacity exists for the volume of these wastes that are underground injected, requiring either incineration or wastewater treatment. The Agency is therefore proposing to grant a national capacity variance to underground injected K011, K013, and K014 wastes. Because these wastes also are First Third wastes, however, the maximum extension available is until August 8, 1990.

The Agency has determined that sufficient capacity does exist for the remainder of the underground injected Second Third proposed wastes and is therefore not proposing any other capacity variances.

2.2.6 Waste Code-Specific Capacity Analysis for Second Third Proposed Wastes (Nonsoils)

This section presents the results of the analysis of required capacity for each alternative technology on a waste code-by-waste code basis for the Second Third proposed wastes. The tables show both the total amount of required capacity for each of the Second Third proposed waste codes that require alternative treatment/recovery and the amount of required capacity for each technology. Tables 2-15 through 2-50 present waste code-by-waste code analyses of the alternative capacity required by the Second Third proposed wastes. The capacity analysis for soils contaminated with Second Third proposed wastes is presented in Section 2.2.7.

The land disposed waste volume data from the TSDR Survey were sorted by waste code and type of alternative treatment/recovery required. This information was then combined and summarized to create technology-specific and waste code-specific capacity analysis tables for the Second Third proposed wastes. The raw data used to develop the capacity analysis tables are included in Appendix C.

Some Second Third proposed wastes were reported in the TSDR Survey as mixed waste streams containing wastes that were included in previous land disposal restriction rulemakings (i.e., solvents, California List HOCs, and/or First Third promulgated wastes). The entire volume of these waste streams was included in the capacity analyses made for the previous rulemakings. To avoid double-counting, therefore, these waste streams are not included in the capacity analysis made for this proposed rule. See Section 3 for a more detailed description of the capacity analysis methodology.

This section also presents discussions for each Second Third proposed waste code requiring alternative treatment. Each discussion contains a description of the waste, identifies the hazardous constituents for which it is listed, and identifies the BDAT technology used to set the treatment standard. In today's rule, treatment standards are also being proposed for K004, K005, K008, K023, K028, K029, K036 wastewaters, K038, K039, K040, K043, K095, K096, K113, K114, K116, P013, P021, P040, P041, P043, P062, P074, P085, P097, P099, P104, P109, P111, P121, U058, U088, U102, U107, and U235. These wastes are not included in this section because no nonsoil wastes with these codes were reported in the TSDR Survey as being land disposed and therefore will not require alternative treatment. Consequently, the Agency is not proposing to grant capacity variances for these wastes.

Several K007 waste streams were reported in the TSDR Survey as being land disposed in 1986. However, based on recent information, the Agency believes that alternative treatment will not be required because the waste is no longer generated. Therefore, in today's rule, the Agency is proposing a treatment standard of "no land disposal based on no generation" for this waste code.

In a limited number of instances, it was not feasible to assign waste streams directly to the BDAT technology; therefore, these wastes were assigned to alternative technologies. In these cases, the waste code discussions explain why the waste stream could not be assigned directly to BDAT and how the stream was handled. (Section 3.1.2 explains the methodology used to assign alternative technologies.)

F006

RCRA hazardous waste F006 is wastewater treatment sludges from certain electroplating operations. F006 is listed as hazardous because of the presence of cadmium, hexavalent chromium, nickel, and cyanides (complexed). In the land disposal restrictions for the First Third Scheduled Wastes Final Rule (53 FR 31138), the Agency set treatment standards for the metals in F006 nonwastewaters based on stabilization. In today's proposed rule, the Agency has established treatment standards for cyanides in F006 nonwastewaters based on wet air oxidation or alkaline chlorination followed by chemical precipitation. Treatment standards are being proposed for cyanides in F006 because the Agency believes that a pretreatment step to destroy the cyanides should be performed prior to stabilization.

In the First Third final rule, the Agency estimated that 129 million gallons of surface land disposed F006 wastes would require stabilization as a result of the metals treatment standards. Adequate stabilization capacity was determined to be available for this volume of waste. Based on available information, the Agency believes that the F006 wastes requiring alternative treatment are currently being pretreated for cyanides and will not require additional treatment capacity because of today's proposed cyanide treatment standards. Therefore, the Agency is not proposing to grant a capacity variance for this waste.

F007, F008, F009, F011, F012, and F019

RCRA hazardous wastes F007, F008, F009, F011, F012, and F019 are generated from electroplating and heat treating processes. They are listed as hazardous wastes because of the presence of cyanides. F019 is also listed as a hazardous waste because of the presence of hexavalent chromium. The Agency has identified the BDAT technology for F007, F008, F009, and F011 wastewaters to be wet air oxidation followed by chemical precipitation, filtration, and sludge dewatering. The BDAT technology identified for F007, F008, F009, and F011 nonwastewaters as well as F012 and F019 wastewaters and nonwastewaters is electrolytic oxidation followed by alkaline chlorination, chemical precipitation, and filtration. The BDAT treatment of all these wastes also includes the stabilization of treatment residuals. The Agency must emphasize that other technologies for treating cyanides, such as alkaline chlorination followed by chemical precipitation and filtration, can achieve the treatment standards for these wastes as long as they are well designed and well operated. For purposes of the capacity analysis, these technologies have been grouped together and described as cyanide destruction.

Tables 2-15 through 2-20 show the non-deepwell-injected and deepwell-injected volumes requiring treatment and the alternative treatment technologies determined to be necessary for these wastes. As shown in the tables, most of the wastes requiring alternative treatment were assigned to the BDAT technology. One waste stream reported in the TSDR Survey was a mixed waste of F007, F009, chromium-bearing waste, and cadmium-bearing waste. Because the waste stream was described as an acidic aqueous waste, the Agency assumed that cyanides were not present and assigned the waste stream to chromium reduction followed by chemical precipitation, sludge dewatering, and stabilization of the wastewater treatment sludge.

Several waste streams reported in the TSDR Survey were described as sludge or solid treatment residues. Some of these waste streams were reported by facilities that perform cyanide treatment. Other treatment residues were reported by commercial landfills that have restrictions on accepting wastes with treatable levels of cyanides. Based on this information, the Agency assumed that the wastes had already been treated for cyanides. Therefore, the Agency believes that these waste streams would require only stabilization.

Several F008 waste streams were reported in the TSDR Survey as F008 mixed with metal-bearing organic solids. These waste streams were assigned to solids incineration followed by treatment of the scrubber water and stabilization of the scrubber water treatment sludge and incinerator ash.

Based on the TSDR Survey data, the Agency believes that adequate treatment capacity exists for the non-deepwell-injected F007, F008, F009, F011, F012, and F019 wastes requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes that are not deepwell-injected. For the deepwell-injected wastes, the Agency believes that adequate treatment capacity does not exist for the volume of F007, F008, F009, and F019 wastes requiring alternative treatment because of the large volume of deepwell-injected F007 wastes. Therefore, the Agency is proposing to grant a national capacity variance for only the F007 wastes that are deepwell injected. Since F007 is a First Third waste, the maximum variance available is to August 8, 1990.

Table 2-15 Capacity Analysis for F007

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	578,141	126,193,680
Chromium reduction and chemical precipitation	0	113,040
Stabilization of wastewater treatment sludge	470,514	1,274,022
Stabilization	242,018	0

Table 2-16 Capacity Analysis for F008

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	1,023,202	15,120
Stabilization of wastewater treatment sludge	1,000,347	3,209
Stabilization	355,675	240
Combustion of sludges	2,640	0
Combustion of solids	14,760	0
Stabilization of incinerator ash	3,216	0
Stabilization of scrubber water treatment sludge	174	0

Table 2-17 Capacity Analysis for F009

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	45,251	42,480
Chromium reduction and chemical precipitation	0	6,480
Stabilization of wastewater treatment sludge	10,595	489
Stabilization	242,018	0

Table 2-18 Capacity Analysis for F011

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	82,820	0
Stabilization of wastewater treatment sludge	49,219	0
Stabilization	3,788	0

Table 2-19 Capacity Analysis for F012

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	63,572	0
Stabilization of wastewater treatment sludge	61,290	0

Table 2-20 Capacity Analysis for F019

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	3,016,174	0
Stabilization of wastewater treatment sludge	2,986,012	0
Stabilization	3,531,762	1,440
Combustion of sludges	1,680	0
Stabilization of incinerator ash	168	0
Stabilization of scrubber water treatment sludge	17	0

F010

RCRA hazardous waste F010 is generated from heat treating operations. F010 is listed as a hazardous waste because of the presence of cyanides. The Agency has identified the BDAT technology for this waste to be incineration followed by stabilization of the incinerator ash and scrubber water treatment sludge.

As shown in Table 2-21, all of the F010 wastes requiring alternative treatment were assigned to the BDAT technology. Based on the TSDR Survey data, the Agency believes that adequate treatment capacity exists for the non-deepwell-injected F010 wastes requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for the F010 wastes that are not deepwell injected. Deepwell-injected F010 wastes were not identified from the TSDR Survey as requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes that are deepwell injected.

Table 2-21 Capacity Analysis for F010

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	77,952	0
Stabilization of incinerator ash	7,795	0
Stabilization of scrubber water treatment sludge	780	0

F024

RCRA hazardous waste F024 is generated from the production of aliphatic hydrocarbons. F024 is listed as a hazardous waste because of the presence of toxic organics. The Agency has identified the BDAT technology for F024 to be incineration followed by stabilization of the treatment residuals.

As shown in Table 2-22, all of the F024 wastes requiring alternative treatment were assigned to the BDAT technology. Based on the TSDR Survey data, the Agency believes that adequate treatment capacity exists for the non-deepwell-injected F024 wastes requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for the F024 wastes that are not deepwell injected. Deepwell-injected F024 wastes were not identified from the TSDR Survey as requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes that are deepwell injected.

Table 2-22 Capacity Analysis for F024

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	9,360	0
Combustion of sludges	46,080	0
Combustion of solids	16,800	0
Stabilization of incinerator ash	24,336	0
Stabilization of scrubber water treatment sludge	629	0

K002, K003, and K006

RCRA hazardous wastes K002, K003, and K006 are inorganic wastewater treatment sludges from the production of various pigments. These wastes are listed as hazardous because of the presence of lead and hexavalent chromium. The Agency has identified the BDAT technology for the nonwastewater forms of these wastes to be "no land disposal based on total recycling." At this time, the Agency is not proposing treatment standards for the wastewater forms of these wastes. The Agency may develop such treatment standards prior to May 8, 1990, if there is an identified need for such standards.

The Agency has obtained information indicating that several facilities are selling mixtures of these wastes, recycling them back to the production process, or sending them to secondary smelting facilities for metals recovery. The Agency believes that these types of recycling and/or recovery techniques can be used for all of the K002, K003, and K006 nonwastewaters requiring alternative treatment.

As shown in Tables 2-23 through 2-25, all of the K002, K003, and K006 wastes requiring alternative treatment were assigned to secondary smelting. This was done as a worst-case analysis of the volume of these wastes that may require commercial secondary smelting as an alternative treatment as a result of today's proposed rule.

Based on the TSDR Survey data, the Agency believes that adequate treatment capacity exists for the maximum volume of non-deepwell-injected K002, K003, and K006 wastes that may require alternative treatment.

Therefore, the Agency is not proposing to grant a national capacity variance for these wastes that are not deepwell injected. Deepwell-injected K002, K003, or K006 wastes were not identified from the TSDR Survey as requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes that are deepwell injected.

Table 2-23 Capacity Analysis for K002

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Secondary smelting	425,832	0

Table 2-24 Capacity Analysis for K003

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Secondary smelting	425,832	0

Table 2-25 Capacity Analysis for K006

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Secondary smelting	412,752	0

K009 and K010

RCRA hazardous wastes K009 and K010 are generated in the production of acetaldehyde. These wastes are listed as hazardous because of the presence of toxic organics. The Agency has identified the BDAT technology for these wastes to be incineration for nonwastewaters and steam stripping and/or biological treatment for wastewaters. The BDAT technology identified for K009 and K010 nonwastewaters is based on a transfer of the incineration standards for K019 promulgated with the First Third wastes on August 8, 1988.

As shown in Tables 2-26 and 2-27, all of the K009 and K010 wastes requiring alternative treatment were assigned to the BDAT technology for wastewaters. The waste requiring alternative treatment is a single mixed K009/K010 waste stream that was deepwell injected. The waste stream was described as an aqueous waste with a low level of other toxic organics; therefore, the waste stream was assigned to the BDAT treatment for wastewaters. The Agency believes that stabilization of the treatment residuals from this waste stream will not be required.

Based on TSDR Survey data, the Agency believes that adequate treatment capacity does not exist for the volume of deepwell-injected K009 and K010 wastes requiring alternative treatment. Therefore, the Agency is proposing to grant a 2-year national capacity variance for these wastes that are deepwell injected. Non-deepwell-injected K009 or

K010 wastes were not identified from the TSDR Survey as requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes that are not deepwell injected.

Table 2-26 Capacity Analysis for K009

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Steam stripping and/or biological treatment	0	54,370,000

Table 2-27 Capacity Analysis for K010

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Steam stripping and/or biological treatment	0	54,370,000

K011, K013, and K014

RCRA hazardous wastes K011, K013, and K014 are wastes generated in the production of acrylonitrile. These wastes are listed as hazardous because of the presence of toxic organics. K011 and K013 are also listed as hazardous because they are reactive. The Agency has identified the BDAT technology for these wastes to be incineration for nonwastewaters and wet air oxidation followed by biological treatment for wastewaters. The BDAT treatment of nonwastewaters also includes the stabilization of treatment residuals.

As shown in Tables 2-28 through 2-30, all of the K011, K013, and K014 wastes requiring alternative treatment were assigned to the BDAT technologies. The volumes of K011, K013, and K014 wastes assigned to wet air oxidation followed by biological treatment were described in the TSDR Survey as wastewaters, aqueous mixtures, or aqueous waste with a low level of other toxic organics. All K011, K013, and K014 wastewaters were reported as being deepwell injected. The other K011, K013, and K014 waste streams were believed to be nonwastewaters and were assigned to incineration.

Based on the TSDR Survey data, the Agency believes that adequate treatment capacity exists for the non-deepwell-injected K011, K013, and K014 wastes requiring alternative treatment (nonwastewaters). Therefore, the Agency is not proposing to grant a national capacity variance for these wastes that are not deepwell injected. However, the Agency believes that adequate capacity does not exist for the volume of these wastes that is deepwell injected (wastewaters and nonwastewaters). Therefore, the Agency is proposing to grant a national capacity variance for the K011, K013, and K014 wastes that are deepwell injected. Since these are First Third wastes, the maximum variance available is to August 8, 1990.

Table 2-28 Capacity Analysis for K011

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	49,920	145,176,680
Combustion of sludges	16,008	0
Combustion of solids	85,728	0
Stabilization of incinerator ash	19,245	1,451,766
Stabilization of scrubber water treatment sludge	1,019	1,451,766
Wet air oxidation and biological treatment	0	364,563,440

Table 2-29 Capacity Analysis for K013

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	0	145,176,680
Combustion of sludges	17,928	0
Combustion of solids	85,128	0
Stabilization of incinerator ash	18,818	1,451,766
Stabilization of scrubber water treatment sludge	1,030	1,451,766
Wet air oxidation and biological treatment	0	338,525,600

Table 2-30 Capacity Analysis for K014

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of sludges	16,008	0
Stabilization of incinerator ash	1,600	0
Stabilization of scrubber water treatment sludge	160	0
Wet air oxidation and biological treatment	0	126,309,600

K027, K115, U221, and U223

RCRA hazardous wastes K027, K115, U221, and U223 are generated in the production of toluene diisocyanate and toluenediamine. These wastes are listed as hazardous because of reactivity and the presence of toxic organics. The Agency has identified the BDAT technology for these wastes to be incineration for nonwastewaters and carbon adsorption for wastewaters. The Agency is proposing that these technologies be required as a method of treatment rather than developing numerical standards.

As shown in Tables 2-31 through 2-34, all of the K027, K115, U221, and U223 wastes requiring alternative treatment were assigned to the BDAT technologies. The only wastewater identified as requiring alternative treatment was a small volume of deepwell-injected U223 wastes. The deepwell-injected U223 wastes were not identified from the TSDR Survey; however, information obtained from the EPA Office of Drinking Water's Hazardous Waste Injection Well Data Base indicated that a small volume of U223 wastes may require alternative treatment. This volume is included in Table 2-34.

Based on the TSDR Survey and the EPA Office of Drinking Water data, the Agency believes that adequate treatment capacity exists for non-deepwell-injected and deepwell-injected K027, K115, U221, and U223 wastes requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes.

Table 2-31 Capacity Analysis for K027

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of sludges	7,466,944	0
Combustion of solids	19,680	0

Table 2-32 Capacity Analysis for K115

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of sludges	161,760	0

Table 2-33 Capacity Analysis for U221

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	0	26,824,080
Combustion of solids	305,760	0

Table 2-34 Capacity Analysis for U223

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	58,800	0
Carbon adsorption	0	9,853 [a]

[a] Based on the EPA Office of Drinking Water's Hazardous Waste Injection Well Data Base.

K093 and K094

RCRA hazardous wastes K093 and K094 are generated in the production of phthalic anhydride from ortho-xylene. These wastes are listed as hazardous because of the presence of toxic organics. The Agency has identified the BDAT technology for K093 and K094 to be incineration. This is based on a transfer of the incineration standards for K024 wastes promulgated with the First Third wastes on August 8, 1988.

As shown in Tables 2-35 and 2-36, all of the K093 and K094 wastes requiring alternative treatment were assigned to the BDAT technology. The BDAT treatment of these wastes does not normally require the treatment of scrubber water and incinerator ash, and no K093 or K094 waste streams reported in the TSDR Survey were believed to require this additional treatment.

Based on the TSDR Survey data, the Agency believes that adequate treatment capacity exists for the non-deepwell-injected K093 and K094 wastes requiring alternative treatment. Therefore, the Agency is not proposing to grant a capacity variance for these wastes that are not deepwell injected. Deepwell-injected K093 and K094 wastes were not identified from the TSDR Survey as requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes that are deepwell injected.

Table 2-35 Capacity Analysis for K093

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of sludges	36,480	0

Table 2-36 Capacity Analysis for K094

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of sludges	36,480	0

P029, P030, P063, P098, and P106

RCRA hazardous wastes P029, P030, P063, P098, and P106 are listed as hazardous because of the presence of cyanides. The Agency has identified the BDAT technology for these wastes to be wet air oxidation followed by chemical precipitation, filtration, and sludge dewatering. The BDAT treatment for these wastes that have a metal constituent also includes the stabilization of treatment residuals. The Agency must emphasize that other technologies for treating cyanides, such as alkaline chlorination followed by chemical precipitation and filtration, can achieve the treatment standards for these wastes as long as they are well designed and well operated. For purposes of the capacity analysis, these technologies have been grouped together and described as cyanide destruction.

As shown in Tables 2-37 through 2-41, all of the P029, P030, P063; P098, and P106 wastes requiring alternative treatment have been assigned to the BDAT technology except for the deepwell-injected P063 wastes.

Two deepwell-injected waste streams reported in the TSDR Survey were mixed wastes of P063, K011, and K013. These waste streams were assigned to the BDAT technologies identified for K011 and K013. One waste stream, described as a wastewater, was assigned to wet air oxidation followed by biological treatment. The other waste stream, described as a nonwastewater, was assigned to incineration. The Agency believes that these technologies will be capable of meeting the treatment standards applicable to these wastes streams.

When mixed waste streams are reported in the TSDR Survey and no breakdown of the volumes of the component wastes is given, the total volume is assumed to be divided equally among the components. This assumption results in 184 million gallons being attributed to P063. The Agency believes that this is an extremely large volume for this waste code and that the actual volume of P063 is much lower. As a result, EPA is not proposing to grant a capacity variance to P063. However, the Agency solicits comment on the volumes and characteristics of any P063 wastes being injected. Any new information will be evaluated and used in making a final determination on the need for a capacity variance for this waste.

Based on the TSDR Survey data and other available information, the Agency believes that adequate treatment capacity exists for the non-deepwell-injected and deepwell-injected P029, P030, P063, P098, and P106 wastes requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes.

Table 2-37 Capacity Analysis for P029

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	0	1,512
Stabilization of wastewater treatment sludge	0	15

Table 2-38 Capacity Analysis for P030

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	21,382	22,552
Stabilization of wastewater treatment sludge	0	15

Table 2-39 Capacity Analysis for P063

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	0	56,300,000
Cyanide destruction	98,808	0
Wet air oxidation and biological treatment	0	128,000,000

Table 2-40 Capacity Analysis for P098

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	192	2,952
Stabilization of wastewater treatment sludge	2	15

Table 2-41 Capacity Analysis for P106

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Cyanide destruction	4,975	0
Stabilization of wastewater treatment sludge	2	0

P039, P071, P089, and P094

RCRA hazardous wastes P039, P071, P089, and P094 are organophosphorous wastes. These hazardous wastes are listed for toxicity. The Agency has identified the BDAT technology for these wastes to be incineration. This is based on a transfer of the incineration standards for K037 promulgated with the First Third wastes on August 8, 1988.

As shown in Tables 2-42 through 2-45, all of the wastes requiring alternative treatment were assigned to the BDAT technology. The BDAT treatment of these wastes does not normally require treatment of scrubber water and incinerator ash, and no waste streams reported in the TSDR Survey were believed to require this additional treatment.

Based on the TSDR Survey data, the Agency believes that adequate treatment capacity exists for the non-deepwell-injected and deepwell-injected P039, P071, P089, and P094 wastes requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes.

Table 2-42 Capacity Analysis for P039

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	295	0

Table 2-43 Capacity Analysis for P071

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	0	1,920
Combustion of solids	25,896	0

Table 2-44 Capacity Analysis for P089

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	27,360	1,200

Table 2-45 Capacity Analysis for P094

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	1,200	0

P044 and U087

RCRA hazardous wastes P044 and U087 are organophosphorous wastes listed for toxicity. The Agency has identified the BDAT technology for these wastes to be incineration for nonwastewaters and carbon adsorption for wastewaters. The Agency is proposing that these technologies be required as a method of treatment rather than developing numerical standards.

As shown in Tables 2-46 and 2-47, all of the P044 and U087 wastes requiring alternative treatment have been assigned to the BDAT technology for nonwastewaters. The BDAT treatment of these wastes does not normally require treatment of scrubber water and incinerator ash, and no waste streams reported in the TSDR Survey were believed to require this additional treatment. P044 or U087 waste streams described as wastewaters were not identified from the TSDR Survey as requiring alternative treatment.

Based on the TSDR Survey data, the Agency believes that adequate treatment capacity exists for the non-deepwell-injected and deepwell-injected P044 and U087 wastes requiring alternative treatment. Therefore, the Agency is not proposing to grant a national capacity variance for these wastes.

Table 2-46 Capacity Analysis for P044

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	960	0

Table 2-47 Capacity Analysis for U087

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	0	960

U028, U069, and U190

RCRA hazardous wastes U028, U069, and U190 are phthalate wastes listed for toxicity. The Agency has identified the BDAT technology for these wastes to be incineration. This is based on a transfer of the incineration standards for K024 promulgated with the First Third wastes on August 8, 1988.

As shown in Tables 2-48 through 2-50, all of the U028, U069, and U190 wastes requiring alternative treatment were assigned to the BDAT technology. The BDAT treatment of these wastes does not normally require the treatment of scrubber water and incinerator ash, and no waste streams reported in the TSDR Survey were believed to require this additional treatment. Deepwell-injected U028, U069, or U190 wastes were not identified from the TSDR Survey as requiring alternative treatment. However, information obtained from the EPA Office of Drinking Water's Hazardous Waste Injection Well Data Base indicates that a small volume of deepwell-injected U190 wastes may require alternative treatment. This volume is included in Table 2-50.

Based on the TSDR Survey and the EPA Office of Drinking Water data, the Agency believes that adequate treatment capacity exists for the non-deepwell-injected and deepwell-injected U028, U069, and U190 wastes requiring alternative treatment. Therefore, the Agency is not proposing to grant a capacity variance for these wastes.

Table 2-48 Capacity Analysis for U028

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of solids	480	0

Table 2-49 Capacity Analysis for U069

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of solids	1,440	0

Table 2-50 Capacity Analysis for U190

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of liquids	22,560	9,853 [a]
Combustion of solids	51,780	0

[a] Based on the EPA Office of Drinking Water's Hazardous Waste Injection Well Data Base.

2.2.7 Contaminated Soils

Because of the unique treatability and regulatory issues associated with contaminated soils, such soils have been handled separately in this document. Table 2-51 presents estimates based on TSDR Survey data of the total volume of contaminated soils land disposed at Subtitle C facilities, as well as a breakdown of the total volume land disposed per regulatory group, including the waste affected by today's proposed rule. Contaminated soils were identified by the waste description code associated with each waste stream and do not include contaminated debris unless specifically stated by the facility. The Survey contains data only on the volume of contaminated soils land disposed, not on the volume generated. Furthermore, no data are available on the source generating the waste volume being land disposed (e.g., corrective actions, spill cleanups, etc.).

Available capacity was first assigned to the nonsoil land-disposed wastes analyzed in this document (i.e., solvent, HOCs, First Third promulgated wastes, and Second Third proposed wastes). The remaining capacity was then used as available for contaminated soils. Table 2-52 presents the results of the capacity analyses conducted for soils contaminated with solvents, HOC wastes (excluding First Third promulgated wastes containing HOCs), First Third promulgated wastes, and Second Third proposed wastes. Tables 2-53 through 2-73 present waste code-by-waste code analysis of the treatment capacity required by soils contaminated with Second Third proposed wastes.

In the First Thirds rule, the Agency granted a 2-year national capacity variance for contaminated soils requiring incineration. Since promulgation of the First Thirds rule, additional incineration capacity has become operational. The increased available incineration capacity is shown in Table 2-52. However, the Agency believes that adequate capacity still does not exist for contaminated soils because the increase in incineration capacity reflects predominantly an increase in incineration types that are not appropriate for soils. Therefore, the Agency is proposing to grant a 2-year national capacity variance for soils contaminated with Second Third proposed wastes, all of which the Agency estimates will require incineration.

Table 2-51 Volume of Contaminated Soils Land Disposed

Regulatory group	Land-disposed volume (million gallons/year)
Solvents	26
First Third promulgated wastes	18
HOCs containing soft hammer First Third wastes	2
All other HOC wastes	4
Second Third proposed wastes	2
Other RCRA wastes	12
All RCRA wastes	64

Table 2-52 Contaminated Soils
Capacity Analysis

Technology	Available capacity (million gal/yr)	Required capacity (million gal/yr)
Combustion of soils (sludges/solids)		
- Solvents		26
- First Third promulgated wastes	12	12
- HOCs (excluding above)		4
- Second Third proposed wastes		2
Stabilization of soils contaminated with:		
- Solvents (other)		<1
- Solvents (combustion residues)		10
- First Third promulgated wastes (combustion residues)	264	6
- First Third promulgated wastes (other)		11
- Second Third proposed wastes (combustion residues)		2

Table 2-53 Capacity Analysis for
F007 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	782,258	0
Stabilization of incinerator ash	774,435	0
Stabilization of scrubber water treatment sludge	7,823	0

Table 2-54 Capacity Analysis for
F008 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	596,635	0
Stabilization of incinerator ash	590,669	0
Stabilization of scrubber water treatment sludge	5,966	0

Table 2-55 Capacity Analysis for
F009 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	242,018	0
Stabilization of incinerator ash	239,598	0
Stabilization of scrubber water treatment sludge	2,420	0

Table 2-56 Capacity Analysis for F010 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	480	0
Stabilization of incinerator ash	475	0
Stabilization of scrubber water treatment sludge	5	0

Table 2-57 Capacity Analysis for F011 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	3,788	0
Stabilization of incinerator ash	3,750	0
Stabilization of scrubber water treatment sludge	38	0

Table 2-58 Capacity Analysis for F019 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	56,358	0
Stabilization of incinerator ash	55,795	0
Stabilization of scrubber water treatment sludge	564	0

Table 2-59 Capacity Analysis for
K011 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	120	0
Stabilization of incinerator ash	118	0
Stabilization of scrubber water treatment sludge	1	0

Table 2-60 Capacity Analysis for K013 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	120	0
Stabilization of incinerator ash	118	0
Stabilization of scrubber water treatment sludge	1	0

Table 2-61 Capacity Analysis for
K113 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	240	0
Stabilization of incinerator ash	238	0
Stabilization of scrubber water treatment sludge	2	0

Table 2-62 Capacity Analysis for
P029 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	240	0
Stabilization of incinerator ash	238	0
Stabilization of scrubber water treatment sludge	2	0

Table 2-63 Capacity Analysis for
P030 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	7,350	0

Table 2-64 Capacity Analysis for P044 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	1,680	0

Table 2-65 Capacity Analysis for P063 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	15,360	0

Table 2-66 Capacity Analysis for P071 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	46,980	0

Table 2-67 Capacity Analysis for P094 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	36,600	0
Stabilization of incinerator ash	48	0
Stabilization of scrubber water treatment sludge	1	0

Table 2-68 Capacity Analysis for
P106 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	480	0

Table 2-69 Capacity Analysis for U028 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	386,160	0

Table 2-70 Capacity Analysis for U069 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	1,440	0

Table 2-71 Capacity Analysis for
U190 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	11,550	0

Table 2-72 Capacity Analysis for
U221 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	97,200	0

Table 2-73 Capacity Analysis for U223 (soil and debris)

Type of alternative treatment/recovery	1988 non-deepwell volume requiring alternative capacity (gallons/year)	1988 deepwell volume requiring alternative capacity (gallons/year)
Combustion of soils	6,000	0

3. CAPACITY ANALYSIS METHODOLOGY

This section of the background document presents a detailed discussion of the methodology (approach) and rationale for the capacity analyses to support this proposed rule.

Section 3.1 includes a brief discussion of the data sources and the technical review and quality control procedures associated with the creation of the waste volume data set used for capacity analysis. Section 3.1 also presents a detailed discussion of the methodology used for determination of required alternative capacity for land disposed wastes (capacity demand). Section 3.2 provides a detailed discussion of the determination of available alternative capacity (supply) and the creation of the alternative capacity data sets used for the analysis. Finally, Section 3.3 describes the methodology used to compare the waste volumes and the associated demand for alternative capacity with the supply of available capacity to determine whether adequate capacity exists to support the land disposal restrictions.

3.1 Determination of Required Treatment Capacity

This section presents a detailed discussion of the analytical methodology used to determine the demand for alternative treatment capacity required by wastes affected by today's proposed rule.

3.1.1 Waste Volumes Affected

As mentioned previously, this document presents an analysis of required and available treatment capacity for Second Third proposed wastes, including contaminated soils. To assess the requirements for alternative treatment capacity that will result from the proposed restrictions, it was necessary to identify waste volumes by land disposal method, waste code, and physical/chemical form. With this information, it is possible to identify which treatment technologies are applicable to the waste volumes and to determine required alternative treatment capacity.

(1) Data sources. The TSDR Survey data base described above was the only source used to estimate surface disposed waste volumes and the primary source used to estimate underground injected waste volumes. For some wastes (specifically U190 and U223), the TSDR Survey did not contain data on underground injected volumes. Consequently, the EPA Office of Drinking Water's Hazardous Waste Injection Well Database (HWIWDB) was used to determine the underground injected volume for these two wastes (Ref. 8).

(2) Identification of waste volumes. Second Third proposed wastes were identified on a waste code basis. For Second Third proposed wastes described by a single waste code, the volume was allocated to the appropriate waste code.

For waste groups (mixed wastes and/or wastes described by more than one RCRA waste code), the entire volume was included in the regulatory group of the highest priority code in the group. For example, if a waste group was described by both a solvent waste code (F001-F005) and a Second Third proposed code, the entire waste volume was assigned to solvents because they were restricted prior to Second Third wastes.

Consequently, to avoid double-counting, only waste volumes for waste groups containing a Second Third proposed code but no solvents, potential California List halogenated organic compounds (HOCs), or First Third wastes for which a treatment standard was promulgated on August 8, 1988, (i.e., non-soft hammer First Third wastes) have been included in today's estimates of required capacity. Furthermore, if a waste group contained more than one Second Third proposed code but no previously restricted codes, the volume was divided equally among the Second Third proposed codes.

(3) Determination of affected volumes. Land disposal is defined under RCRA as any placement of hazardous waste into or on the land. Therefore, storage and treatment of hazardous waste in or on the land is also considered land disposal. Land disposal methods can be divided into numerous categories. Five of these methods are addressed in detail in this document: disposal in landfills; treatment and storage in waste piles; disposal by land application; treatment, storage, and disposal in surface impoundments; and underground injection. Utilization of salt dome formations, salt bed formations, and underground mines and caves are additional methods of land disposal that are affected by this rulemaking. Currently, there is insufficient information to document the volumes of First Third wastes disposed of by these last three methods; therefore, they are not addressed in the analysis of volumes and required alternative treatment capacity.

Estimates of the volume of affected wastes that have been stored (but not treated or disposed of) in surface impoundments or waste piles are presented. Storage implies a temporary placement of wastes in the surface impoundment or waste pile. EPA has assumed that all of the affected wastes stored in surface impoundments are eventually treated or recycled or that they are routed to permanent disposal in other existing units. To avoid double-counting in this analysis (i.e., counting waste volumes once when they are stored and again when they are finally disposed of), the volumes of wastes reported as being stored in surface impoundments or waste piles were not included in the estimates of volumes requiring alternative treatment capacity. Nevertheless, these wastes will be affected by the restrictions and will require alternative storage capacity. However, if it were determined during the facility level analysis that wastes were being stored indefinitely in the impoundment or waste pile (i.e., long-term storage), these volumes were included as requiring alternative treatment capacity because they would not be counted elsewhere. Long-term storage of hazardous waste was determined by examining the responses to the TSDR Survey regarding waste piles and surface impoundments. If hazardous waste entered the waste pile or surface impoundment for storage in 1986 but was not reported as having been removed from the impoundment or waste pile for treatment or disposal prior to or during 1986, the waste was considered to have undergone long-term storage.

HSWA required that all surface impoundments be in compliance with certain minimum design and operating criteria (minimum technology requirements; see RCRA Section 3005(j)) to continue receiving, treating, or storing hazardous waste beyond November 8, 1988. Furthermore, the land disposal restrictions, upon promulgation, forbid placement of restricted wastes in surface impoundments, except for treatment. Consequently, most surface impoundments were replaced by tanks, retrofitted to meet the minimum technical standards, or closed entirely by November 1988. Because the baseline year for the TSDR Survey is 1986, however, the 1986 land disposed volumes do not reflect these changes. Therefore, a special analysis of the management of wastes in surface impoundments was conducted. As described in Section 2.1.1, if it could be determined from the survey responses or through facility followup that a treatment surface impoundment was being closed without a replacement (i.e., the surface impoundment will be bypassed because it is not crucial to effective operation of the treatment system), being replaced by tanks, or being retrofitted, then the volume was dropped from further analysis of waste requiring alternative treatment capacity.

For surface impoundments used for treatment and long-term storage or for treatment and disposal that were being replaced by tanks or retrofitted, it was sometimes necessary to include the volume of treatment residual generated in the impoundment in 1986 in the volume requiring alternative treatment capacity. Because the impoundment was used for long-term storage or disposal of the treatment residual, the volume was not counted elsewhere as land disposal. Assuming that the treatment residual would continue to be generated after retrofitting or replacement, the volume of treatment residual generated on an annual basis, not the entire volume entering the impoundment for treatment, was included as requiring alternative treatment capacity. For example, if a facility reported that in 1986 it used a surface impoundment for treatment (settling) and disposal of a First Third promulgated hazardous waste but in 1988 it was replacing the impoundment with a settling tank, the volume of waste entering the impoundment in 1986 would not require alternative treatment capacity because it would no longer be land disposed in 1988. However, the volume that was settling for disposal in 1986 would still be generated in the tank (clarifier) in 1988 and would require alternative treatment capacity prior to disposal. The treatment residual volume would therefore be included in the volume of wastes requiring alternative treatment capacity. If, however, it was determined that the impoundment was a flow-through impoundment and only incidental settling occurred (i.e., less than 1 percent of the volume entering was settled), then it was assumed that there would be essentially no settling when replaced by a tank.

3.1.2 Treatability Analysis

Those wastes that will require alternative treatment/recovery because of the land disposal restrictions have been identified and must be analyzed to determine the types of alternative treatment required. This process is referred to as treatability analysis. This section discusses the methodology used to perform treatability analyses on the wastes identified as requiring alternative treatment/recovery. The results of the treatability analysis conducted on the waste streams used for this rulemaking are contained in Appendix C.

(1) Waste characterization. Respondents to the TSDR Survey were asked to provide limited waste characterization, including a waste code(s) and a waste description code (A/B codes), for each waste stream being land disposed. The A/B codes classify wastes at a minimum by the following general physical/chemical categories and also provide limited qualitative information on hazardous constituents in the waste: inorganic liquids, sludge, solids, and gases and also organic liquids, sludges, solids, and gases. The waste description codes, in some cases, also provide quantitative information on hazardous constituents or characteristics. The waste code and A/B code combinations were the primary source of characterization data used to assess treatability of the wastes.

A limited number of facilities, however, did not provide these codes. If during technical review of the survey or facility followup, the facility was either unwilling or unable to provide these codes, engineering judgment was used to assign a waste description code. All available information from the survey was used to assign the waste description codes, including the survey responses and the facility schematic. These sources could provide information on previous management (e.g., whether the waste was a treatment residual), the origin of the waste (e.g., mixture ruled and derived from rule wastes), and how the waste was being land disposed (e.g., no liquids in landfills).

In addition, for F and K coded wastes for which the facility did not provide waste description codes, the waste description in 40 CFR Part 260, as well as information contained in a report characterizing RCRA waste streams (Ref. 13), was used to assign the waste to the most common physical/chemical form. Occasionally, it was not feasible to assign the waste to the most common form. For example, if the available information indicated the waste was commonly a solid but the waste was being underground injected, it was assumed to be a liquid rather than a solid.

P and U coded wastes for which the facility did not provide waste description codes were generally assigned to either off-spec or discarded products, contaminated soils, or aqueous cleanup residue, depending on the volume, management, and assumed physical/chemical form of each waste. Again, any assumptions regarding the physical form were based on available information from the schematic or survey, including the methods of management. For example, landfilled wastes were assumed to be either sludges or solids, and underground injected wastes were assumed to be liquids. If the volume of waste without description being land disposed was large (i.e., greater than 50 tons for solids or 1,000 gallons for liquids), the waste was assumed to be a contaminated soil or aqueous waste derived from a cleanup operation. This was based on the assumption that, for economic reasons, only small volumes of off-spec products are likely to be produced, and therefore only small volumes would be land disposed.

Characteristic hazardous wastes (i.e., D waste codes) for which the facility did not provide waste description codes were generally assigned a waste description based on the type of land disposal, any information from the schematic or other survey responses, and the characteristic represented by the particular D code. For example, pesticide wastes characteristically hazardous for toxicity were generally considered organic, while toxic metal wastes were considered inorganic.

For the purposes of the TSDR Survey, certain X-codes were created to be used to describe hazardous waste residuals that result from the onsite management of many individual RCRA coded wastes which are no longer individually identifiable. One such X-code was XLEA, which was used to describe leachate from hazardous waste landfills. To ensure that the X-codes were not being abused by respondents and that RCRA codes were being used when it was reasonable to do so, an attempt was made to "un-X" X-coded wastes that were reported as land disposed. In the case of XLEA, information from the facility schematic and facility notes, as well as information on the types of wastes entering the landfill, was used to assign RCRA codes to these wastes. However, because by definition these wastes should no longer be individually identifiable, very few X-coded wastes were assigned RCRA codes.

(2) Treatability grouping/assigning alternative treatment. As previously mentioned, EPA is required to establish treatment standards for those wastes being restricted from land disposal. The Agency has the option of either specifying the use of a particular technology or setting a concentration standard based on the performance of the best demonstrated available technology (BDAT). For the Second Third proposed wastes, the Agency is generally proposing to establish concentration standards based on the performance of the BDAT; however, for some Second Third proposed wastes, EPA is proposing to require the use of the BDAT technology.

Using the characterization data provided by the survey, the waste code and A/B code combinations, and considering the BDAT technologies identified by EPA, wastes were assessed for treatability and assigned to treatability groups. These treatability groups were then assigned to BDAT treatment, or in some cases alternative treatment, that the Agency believes is capable of meeting the BDAT treatment standard. For example, if the BDAT technology was identified as rotary kiln incineration, it was assumed that other types of incineration with the appropriate feed system would be able to achieve the BDAT standard. In addition for this analysis, reuse as fuel in an industrial kiln was also assumed to be equivalent to incineration (incineration and reuse as fuel have been grouped under the general category of combustion).

Wastes with similar A/B codes that require the same BDAT were assigned to the same treatability groups. Appendix D presents the alternative treatment/recovery technologies associated with each treatability group, and Appendix E contains a description of each alternative treatment/recovery technology.

In limited cases, waste could not be assigned to the treatability group representing the BDAT treatment because the physical/chemical form of the waste was incompatible with the BDAT treatment. In these cases, an engineering analysis of the waste stream was conducted to assign the waste to an alternative technology believed capable of achieving the BDAT treatment standard. The results of these analyses for each waste stream are presented in the waste code-by-waste code discussions in Section 2.2.6. The TSDR Survey does not contain data on the performance of treatment technologies; therefore, several alternative sources (Refs. 9, 10, 11, 12, and 13) and "best engineering judgment" were required to identify potential alternatives to BDAT.

A similar analysis was conducted for waste groups (i.e., mixed wastes). Waste groups are hazardous wastes that are described by more than one RCRA waste code, and present special treatability problems in that they are often contaminated with hazardous constituents that may fall under more than one treatability group (e.g., organics and metals). Such waste groups generally cannot be assigned to only the BDAT technology for one specific waste type. Instead, a treatment train that is capable of treating each waste type in the group sequentially must be developed. Often these treatment trains can be developed by combining BDAT treatments in sequence, or by adding pre- or post-treatment steps to the BDAT technology. Treatment trains were developed using the references mentioned above and engineering judgment.

(3) Treatment residuals. Treatment technologies generate residuals that create capacity demand. For example, some wastes require incineration followed by stabilization of the incinerator ash and treatment of the scrubber water followed by stabilization of the resultant wastewater treatment sludge. Based on the TSDR Survey responses, it was determined that RCRA permitted incinerators have adequate air pollution control devices (APCD) (including scrubber water treatment at those facilities with wet scrubbers) and that the facilities considered the capacity of their APCDs and wastewater treatment systems when determining the capacity of their incinerator. Therefore, no attempt was made to evaluate capacity for treatment of scrubber waters. Wastewater treatment sludges and incineration ash requiring stabilization, however, were included in the estimate of treatment residuals requiring capacity.

Although the entire volume would require incineration, only a portion of the original volume would require stabilization because the amount of ash and wastewater treatment sludge generated would be less than the original volume incinerated. To account for these changes in the volume within a treatment train, volume adjustment factors were developed. These factors were developed using engineering judgment and are dependent on the type of treatment and the physical/chemical form of the waste. The factors represent that percent of the original volume exiting the technology of concern. For example, the volume adjustment factor used to estimate the volume of ash generated from incineration of an organic sludge is 0.1, or 10 percent of the original volume, and the volume of scrubber water treatment sludge is estimated at 0.01 or 1 percent of the original volume. Therefore, if 100 gallons were incinerated, the volume adjustment factor would estimate that 10 gallons of ash and 1 gallon of wastewater (scrubber water) treatment sludge would be produced.

(4) Previous management. Another important factor considered during the treatability analysis of a waste was any previous management. Using information contained in the TSDR Survey and the facility schematics, it was possible to evaluate the previous management, if any, for wastes being land disposed. Whenever possible, the previous management of land-disposed wastes was evaluated in an attempt to determine whether the waste had already been treated by the BDAT technology or a technology believed capable of achieving the BDAT treatment standard. If it could be determined that the waste had been previously treated by such a technology, the waste was assumed to meet the BDAT treatment standard. Such wastes would therefore not be prohibited from land disposal and were consequently not included in further analysis of the volume of wastes requiring alternative treatment/recovery capacity.

(5) Wastes excluded from further analysis. Similarly, because of the unique treatability issues associated with lab packs, these wastes were not included in the volume of wastes requiring alternative treatment/recovery capacity. Furthermore, these volumes represent less than 8,000 gallons, a small portion of the volume of wastes affected by today's proposal.

3.2 Determination of Available Treatment Capacity

This section presents a detailed discussion of the analytical methodology used to determine the estimates of alternative "combustion" and "other treatment/recovery" capacity available for wastes affected by today's proposed rule. These processes include combustion in incinerators or industrial kilns and solidification/stabilization, solvent and liquid organic recovery for reuse, metals recovery, acid leaching of sludges, neutralization, and wastewater treatment for cyanides, metals, and organics. A discussion of combustion capacity is separate from the discussion of other treatment capacity. Combustion is predominantly a single unit process system; therefore, the combustion system analysis does not require locating and quantifying a limiting unit within a treatment train of unit processes as in the analysis of other treatment systems.

3.2.1 Determination of Combustion Capacity

(1) Introduction. The combustion data set was established to determine the following information for incineration and reuse as fuel: (1) the utilized capacity during the base or reference year of 1986;

(2) the maximum capacity during 1986 and any planned changes through 1992; (3) the unused or available capacity during the periods 1986, 1987, 1988, 1989-1990, and 1991-1992; and (4) the possible interchange of capacity between the various hazardous waste forms (feed capabilities) for these time periods should excess capacity exist for certain forms and shortfalls exist for others. The data set was generated by technical review and engineering evaluation of the survey responses, development of the data set, and eventual data consolidation and aggregation to arrive at national totals.

At this time, only commercial facility capacity data are included in the data set. These data represent the most readily available capacity, on a national level, to treat the waste that is currently being considered under the land disposal restrictions rule. The capacity indicated by the commercial data set does not include information on two other potential categories of waste treatment capacity, limited commercial and captive facility capacity. "Limited commercial" facilities are those that accept wastes from only a limited number of facilities not under the same ownership--in many cases, only from their customers and/or clients. "Captive facilities" are those that treat wastes from other facilities under the same ownership. Data are not yet available to include this analysis. However, the Agency does not believe that available capacity from these sources would have effected any of the variance decisions for this proposed rule.

The capacity data set was compared to estimates of waste volumes currently being land disposed that will require combustion capacity, to determine whether there is adequate incineration and reuse as fuel capacity for all waste forms. Combustion technologies lend themselves well to wastes that are difficult to treat by conventional treatment technologies, and are very versatile in that they can treat the various waste forms (liquids, sludges, solids, and gases) with some interchangeability.

(2) Approach and methodology. The data set was generated by review and engineering evaluation of TSDR Survey responses, transfer of data in the questionnaires to the computer data set, and final consolidation of all facility capacities to arrive at national totals.

The questionnaires pertaining to incineration and reuse as fuel in the TSDR Survey were Questionnaire B, "Incineration," and Questionnaire C, "Reuse as Fuel," respectively. A copy of the two questionnaires can be found in the docket for this proposed rule (Ref. 5). The questionnaires were designed not only to provide actual utilization and maximum capacity data by facility, but also to provide other design and operational information to enable the reviewer to evaluate the accuracy of the facility responses. These other data elements were:

- Operating/downtime information;
- Percent utilization;
- Maximum practical thermal rating;
- Average heating value of the hazardous and nonhazardous waste being treated;

- Maximum practical feed rate for each waste form;
- Planned capacity increases/decreases by time period;
- Type of solids that can be fed to the unit; and
- Waste characteristics that exclude or limit acceptance for treatment.

The above information was used by the reviewer, using heat balances and other methods, to evaluate the validity of the facility responses to utilized and maximum capacity questions and to determine whether additional maximum capacity was available over and above what the facility reported. If additional capacity was apparent, the reviewer would contact the facility by telephone to verify such findings and, if agreeable to the facility, would adjust the data.

In addition, technical review of reported capacity data included the evaluation of incinerator or kiln support systems such as waste feed handling systems, air pollution control devices, scrubber water treatment systems, and ash handling systems.

The types of incinerators considered in the TSDR Survey were as follows:

- Liquid injection
- Rotary (or rocking) kiln
- Rotary kiln with liquid injection
- Two-stage
- Fixed hearth
- Multiple hearth
- Fluidized bed
- Infrared
- Fume/vapor
- Pyrolytic destructor
- Other (specify).

The types of units that were considered in the Reuse as Fuel questionnaire were as follows:

- Cement kiln
- Aggregate kiln
- Asphalt kiln
- Other kiln (specify)
- Blast furnace
- Sulfur recovery furnace
- Smelting, melting, or refining furnace
- Coke oven
- Other furnace (specify)
- Industrial boiler
- Utility boiler
- Process heater
- Other reuse as fuel (specify).

The computer data set used to consolidate and analyze capacity data from Questionnaires B and C included the following information (brief explanation of each data element):

1. Facility ID - The USEPA identification number for the facility
2. Facility Name
3. Unit No. - data were gathered on a unit basis since some facilities have more than one incinerator or kiln
4. Commercial status - the two commercial categories are facilities that (1) accept waste from the general public (full commercial) and (2) accept waste from a limited number of facilities not under the same ownership (limited commercial)
5. Unit type - a code for the type of incinerator or reuse as fuel unit as described earlier
6. Fixed or Mobile unit (F/M)
7. Exempt (Y/N) - RCRA permit status
8. Thermal Rating, MBtu/hr

9. Waste Feed Mix (Y/N)

   A. liquids
   B. sludges
   C. solids
   D. gases

10. Unique (Y/N): If yes, explain.

11. Capacity 1986

   A. Hazardous Waste Quantity - this amount represents the quantity of RCRA hazardous waste treated in the subject unit during calendar year 1986. This quantity is also referred to as utilized capacity.

   B. Nonhazardous Waste Quantity - this is the quantity of nonhazardous waste that was treated in the same unit, either concurrently or separately, during 1986.

   C. Hazardous Waste Maximum Quantity (Capacity) - the maximum quantity of hazardous waste that the treatment unit could have treated during 1986.

   D. All Waste Maximum Quantity (Capacity) - the maximum quantity of both hazardous and nonhazardous waste that could have been treated in 1986.

12. Planned changes or new units by time period through 1992.

The above data were used to tabulate and develop the combustion capacity data set, the results of which will be discussed in Section 3.2.3, Development of the Treatment Capacity Data Set and Results.

The data are compiled in a personal computer data base for more convenient data management. A copy of the data sheets, along with a description of their use, may be found in Ref. 14.

To make the necessary comparisons for this analysis, the original facility responses were converted to one standard unit, volume in gallons. Data reported in short tons (2,000 lb/ton) by facilities were consistently converted to gallons by using a conversion factor of 240 gal/ton (based on the density of water) for all waste forms other than gases. Gases are reported in standard cubic feet (SCF) in the initial data and were converted to tons by assuming an average molecular weight of 29. However, the analyses were done in the appropriate units (e.g., tons for solids) and simply converted to gallons for consistent presentation of units.

Data through 1990 are presented because the long-range plans of many facilities extend to these latter years, and projections of future capacity may be necessary for variance determinations. It is also assumed that the unit installations reported as operational in 1986 with no closure dates reported will continue to operate through 1990.

Currently, the Agency is planning to promulgate standards for Second Third wastes by June 8, 1989. Consequently, additional sludge/solids combustion capacity planned to be available on this date was included. In order to identify new capacity planned to be available prior to June 8, 1989, the Agency contacted facilities that had reported either additional or new capacity in 1989-90 to obtain the status of the units. Only capacity planned to be fully operational prior to June 1989 was included in support of this proposed rule. The results of this analysis are contained in the docket for this proposed rule (Ref. 15). Prior to promulgation of the final rule, the Agency will reassess the status and availability of these units.

3.2.2 Determination of Other Treatment System Capacities

The capacity data set also includes data on treatment systems other than combustion that may be able to treat Second Third proposed wastes to their respective treatment standards. These technologies include solidification/stabilization, solvent and liquid organic recovery for reuse, metals recovery, and wastewater treatment processes. Because the TSDR Survey data for these treatment processes are reported on a unit process basis, a method was developed to derive a system capacity from the unit process data. The results of this analysis were aggregated into a hazardous waste treatment system capacity data set (PC-based) for comparison with required capacity.

(1) Unit process capacity. The TSDR Survey obtained capacity data on a process-specific basis. A process is defined in the TSDR Survey as one or more units of equipment acting together to perform a single operation on a waste stream. A system is defined in the TSDR Survey as one or more processes that work together to treat a waste stream. Figure 3-1 presents the process codes provided for the TSDR Survey respondent to report treatment process information.

During technical review, three different interpretations by respondents of the process capacity questions were identified, which determined the method of system capacity analysis to be employed.

Case I: Each unit process was reported separately. In such a case, process units must be aggregated into treatment systems so that the capacity of the systems may be calculated from the reported maximum and utilized process capacities.

Case II: When the capacity of each unit process was combined and reported as one process by the facility, and the same process was conducted in several different units (tanks or surface impoundments) that are found in different systems. Responses to the tank and/or surface impoundment questionnaires were used to obtain the utilized capacity of each tank and/or surface impoundment using the process of concern. The maximum capacity of these tanks and/or surface impoundments was obtained by facility contact. The unit process data were then aggregated into treatment systems as in Case I.

Case III: The survey respondent reported the entire treatment system as one process. The utilized and maximum capacities reported for the process were used to represent the entire system. If the individual unit processes that make up the treatment system could not be identified by examining the facility schematic and responses to other questions in the survey, the facility was contacted to obtain that information. The respondent's system data were then inputted into the capacity data set.

Upon completion of technical review, the following information was obtained and examined prior to use in the system capacity analysis:

- All processes that compose the system and the units in which they occur were identified and a flow diagram was constructed;
- The amount of hazardous and nonhazardous waste that enters and leaves the system was quantified so that a mass balance around the system could be conducted;
- The utilized and maximum capacities of each unit were determined;
- If surface impoundments were used in the treatment system, it was determined whether they met minimum technological requirements. The effect of closing, retrofitting, or replacing the surface impoundment with a tank or new minimum technological surface impoundment on system capacity was determined.
- Also noted were any other planned changes to the system and how they may affect the maximum capacity of the unit and/or system.

Figure 3-1

PROCESS CODES

These process codes were developed specifically for this survey to describe the onsite hazardous waste management operations at a facility.

TREATMENT AND RECYCLING

Incineration/thermal treatment

1I	Liquid injection
2I	Rotary (or rocking) kiln
3I	Rotary kiln with a liquid injection unit
4I	Two stage
5I	Fixed hearth
6I	Multiple hearth
7I	Fluidized bed
8I	Infra-red
9I	Fume/vapor
10I	Pyrolytic destructor
11I	Other incineration/thermal treatment

Reuse as fuel

1RF	Cement kiln
2RF	Aggregate kiln
3RF	Asphalt kiln
4RF	Other kiln
5RF	Blast furnace
6RF	Sulfur recovery furnace
7RF	Smelting, melting, or refining furnace
8RF	Coke oven
9RF	Other industrial furnace
10RF	Industrial boiler
11RF	Utility boiler
12RF	Process heater
13RF	Other reuse as fuel unit

Fuel blending

1FB	Fuel blending

Solidification

1S	Cement or cement/silicate processes
2S	Pozzolanic processes
3S	Asphaltic processes
4S	Thermoplastic techniques
5S	Organic polymer techniques
6S	Jacketing (macro-encapsulation)
7S	Other solidification

Recovery of solvents and liquid organics for reuse

1SR	Fractionation
2SR	Batch still distillation
3SR	Solvent extraction
4SR	Thin-film evaporation
5SR	Filtration
6SR	Phase separation
7SR	Dessication
8SR	Other solvent recovery (including pretreatment)

Recovery of metals for reuse

1MR	Electrolytic
2MR	Ion exchange
3MR	Reverse osmosis
4MR	Solvent extraction
5MR	Secondary smelting
6MR	Liming
7MR	Evaporation
8MR	Filtration
9MR	Sodium borohydride
10MR	Other metals recovery (including pretreatment)

Wastewater treatment

Equalization

1WT	Equalization

Cyanide oxidation

2WT	Alkaline chlorination
3WT	Ozone
4WT	Electrochemical
5WT	Other cyanide oxidation

General oxidation (including disinfection)

6WT	Chlorination
7WT	Ozonation
8WT	UV radiation
9WT	Other general oxidation

Chemical precipitation

10WT	Lime
11WT	Sodium hydroxide
12WT	Soda ash
13WT	Sulfide
14WT	Other chemical precipitation

Chromium reduction

15WT	Sodium bisulfite
16WT	Sulfur dioxide
17WT	Ferrous sulfate
18WT	Other chromium reduction

Complexed metals treatment (other than chemical precipitation by pH adjustment)

19WT	Complexed metals treatment

Emulsion breaking

20WT	Thermal
21WT	Chemical
22WT	Other emulsion breaking

Adsorption

23WT	Carbon adsorption
24WT	Ion exchange
25WT	Resin adsorption
26WT	Other adsorption

Stripping

27WT	Air stripping
28WT	Steam stripping
29WT	Other stripping

Evaporation

30WT	Thermal
31WT	Solar
32WT	Vapor recompression
33WT	Other evaporation

Filtration

34WT	Diatomaceous earth
35WT	Sand
36WT	Multimedia
37WT	Other filtration

Sludge dewatering

38WT	Gravity thickening
39WT	Vacuum filtration
40WT	Pressure filtration (belt, plate and frame, or leaf)
41WT	Centrifuge
42WT	Other sludge dewatering

Air flotation

43WT	Dissolved air flotation
44WT	Partial aeration
45WT	Air dispersion
46WT	Other air flotation

Oil skimming

47WT	Gravity separation
48WT	Coalescing plate separation
49WT	Other oil skimming

Other liquid phase separation

50WT	Decanting
51WT	Other liquid phase separation

Biological treatment

52WT	Activated sludge
53WT	Fixed film—trickling filter
54WT	Fixed film—rotating contactor
55WT	Lagoon or basin, aerated
56WT	Lagoon, facultative
57WT	Anaerobic
58WT	Other biological treatment

Other wastewater treatment

59WT	Wet air oxidation
60WT	Neutralization
61WT	Nitrification
62WT	Denitrification
63WT	Flocculation and/or coagulation
64WT	Settling (clarification)
65WT	Reverse osmosis
66WT	Other wastewater treatment

OTHER PROCESSES (TREATMENT OR RECOVERY)

1TR	Other treatment
2TR	Other recovery for reuse

ACCUMULATION

1A	Containers
2A	Tanks

STORAGE

1ST	Container (i.e., barrel, drum)
2ST	Tank
3ST	Waste piles
4ST	Surface impoundment
5ST	Other storage

DISPOSAL

1D	Landfill
2D	Land treatment
3D	Surface impoundment (to be closed as a landfill)
4D	Underground injection well

(2) Hazardous waste treatment/recovery system identification. Using the facility flow diagram with revisions made as a result of technical review, hazardous waste treatment/recovery systems and their respective unit processes were identified. For purposes of the capacity analysis, a hazardous waste treatment/recovery system was identified by each hazardous waste entry point into a unit process or sequence of unit processes. The system begins at the process unit where the hazardous waste stream(s) first enters and consists of all other treatment or recovery process units downstream from the point of entry.

The following examples demonstrate system identification. Figure 3-2 shows a simple hazardous wastewater treatment system. Hazardous waste can enter the three unit processes for treatment at only one point, the chemical precipitation process. Therefore, there is only one hazardous waste treatment system. The system consists of chemical precipitation, clarification/settling, and sludge dewatering (filter press) processes. Note that by this method, recycle streams and nonhazardous waste streams do not affect system identification.

Figure 3-3 depicts three hazardous waste treatment systems. Three hazardous waste entry points exist at three different units, which perform three different processes. The chromium waste treatment system consists of chromium reduction, chemical precipitation of chromium, settling, and sludge dewatering processes. The cyanide waste treatment system consists of a cyanide oxidation process followed by chemical precipitation of metals, and settling and dewatering of the resultant

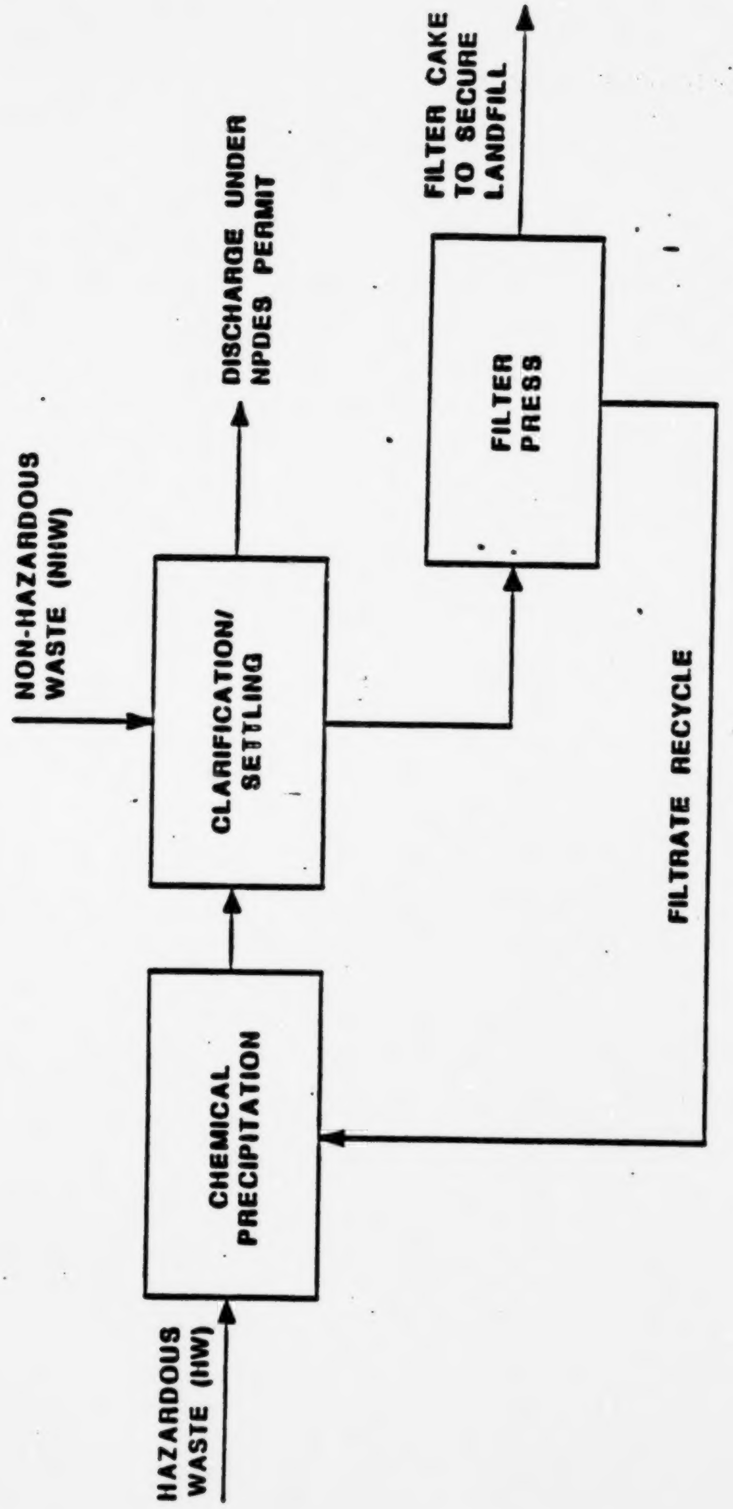

HAZARDOUS WASTE (HW)
CHEMICAL PRECIPITATION
CLARIFICATION/ SETTLING
NON-HAZARDOUS WASTE (NHW)
DISCHARGE UNDER NPDES PERMIT
FILTER PRESS
FILTER CAKE TO SECURE LANDFILL
FILTRATE RECYCLE

Figure 3-2 FLOW DIAGRAM OF A SIMPLE SYSTEM

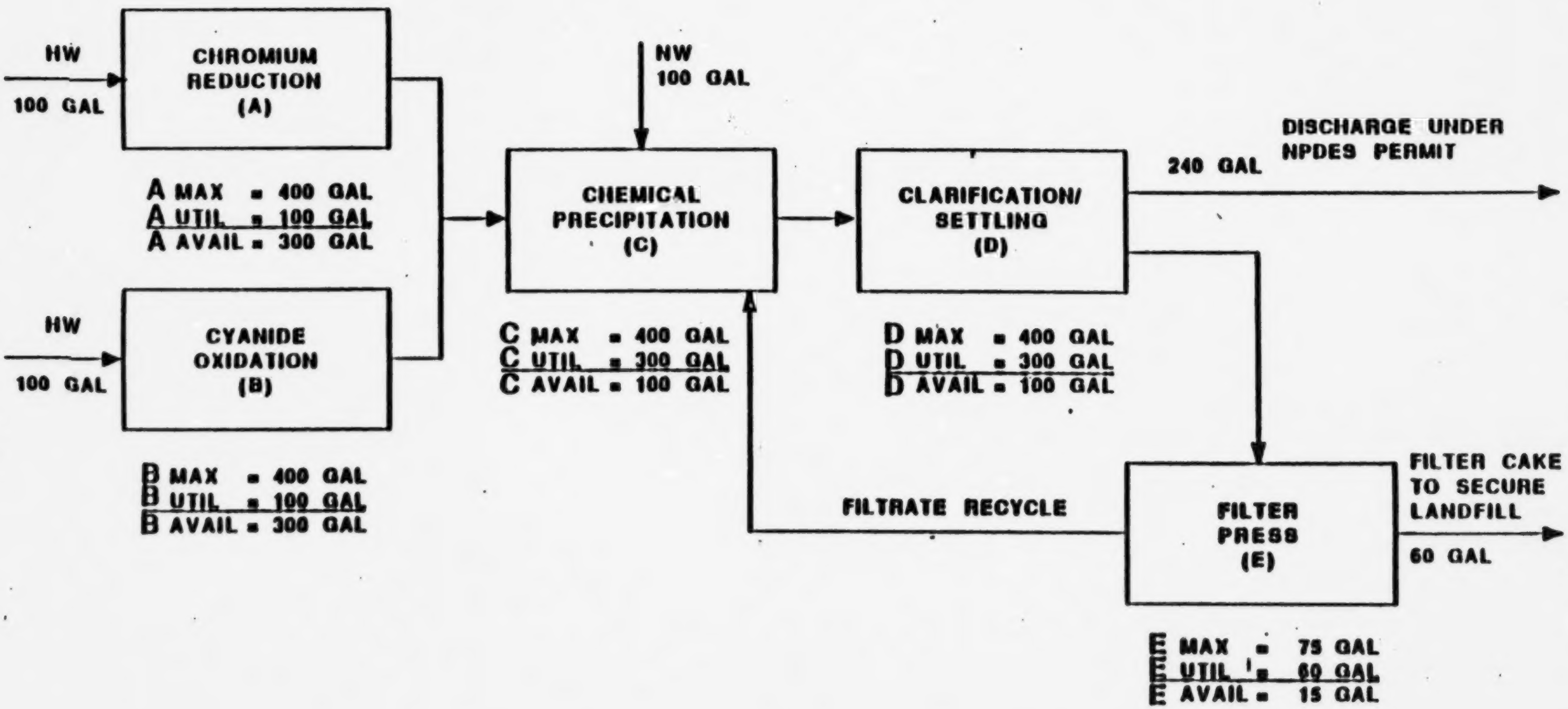

HW
100 GAL
CHROMIUM REDUCTION (A)
A MAX = 400 GAL
A UTIL = 100 GAL
A AVAIL = 300 GAL
HW
100 GAL
CYANIDE OXIDATION (B)
B MAX = 400 GAL
B UTIL = 100 GAL
B AVAIL = 300 GAL
NW
100 GAL
CHEMICAL PRECIPITATION (C)
C MAX = 400 GAL
C UTIL = 300 GAL
C AVAIL = 100 GAL
CLARIFICATION/ SETTLING (D)
D MAX = 400 GAL
D UTIL = 300 GAL
D AVAIL = 100 GAL
240 GAL
DISCHARGE UNDER NPDES PERMIT
FILTRATE RECYCLE
FILTER PRESS (E)
E MAX = 75 GAL
E UTIL = 60 GAL
E AVAIL = 15 GAL
FILTER CAKE TO SECURE LANDFILL
60 GAL

Figure 3-3 FLOW DIAGRAM OF THREE SYSTEMS WITH UNIT PROCESS CAPACITIES

treatment sludge. The third is a treatment system for a general metal-containing waste consisting of chemical precipitation of metals, settling, and sludge dewatering. Note that the three systems share some of the same unit processes. These three systems may be linked together by competing for the capacity of the shared units. If system capacity determination reveals that at least one of the shared units limits the capacity of at least one of the treatment systems, then the three systems are considered linked systems.

At first glance, Figure 3-4 appears to show two systems because there are two hazardous waste entry points. Upon close examination, it can be seen that the two waste streams feed into two different tanks that conduct the same process in parallel. For purposes of capacity analysis, these two units are considered as one process, with the utilized and maximum capacities of the "agglomerated unit" equal to the sum of the utilized and maximum capacities of each of the individual units. Therefore, Figure 3-4 depicts only one hazardous waste treatment system.

(3) Determination of system capacity. To determine the capacity of a treatment system, the utilized and maximum capacity of each unit process must be examined. Where several systems share unit processes, such as in Figure 3-3, all the unit processes that make up each of the potentially linked systems must be considered together for this portion of the analysis.

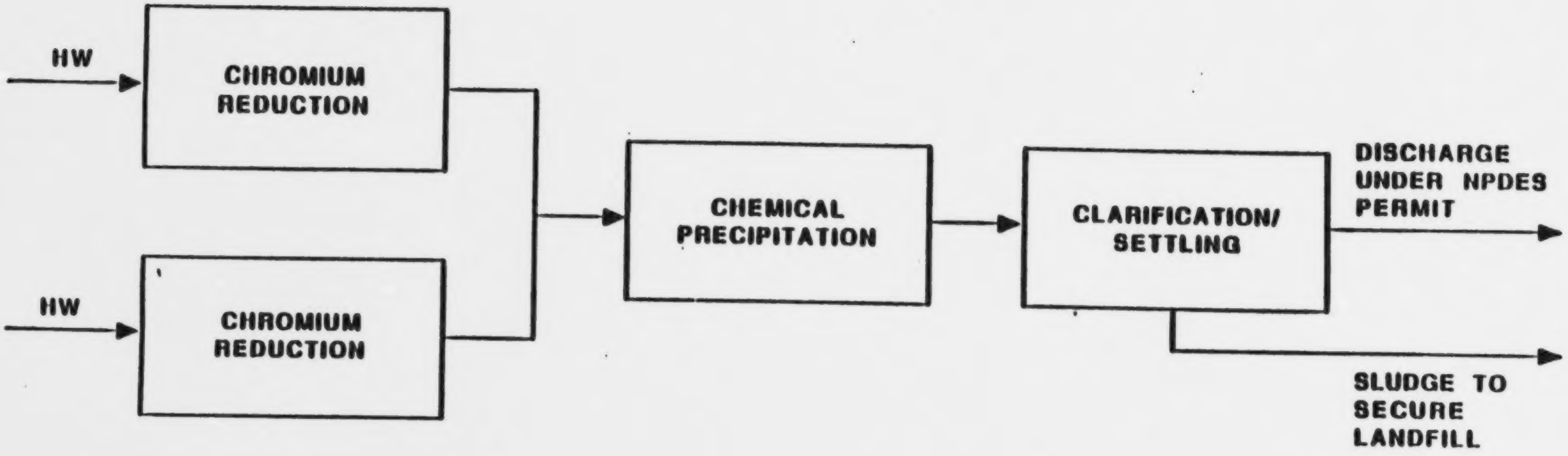

HW
CHROMIUM REDUCTION
HW
CHROMIUM REDUCTION
CHEMICAL PRECIPITATION
CLARIFICATION/ SETTLING
DISCHARGE UNDER NPDES PERMIT
SLUDGE TO SECURE LANDFILL

Figure 3-4 FLOW DIAGRAM OF ONE SYSTEM WITH TWO UNITS CONDUCTING THE SAME PROCESS

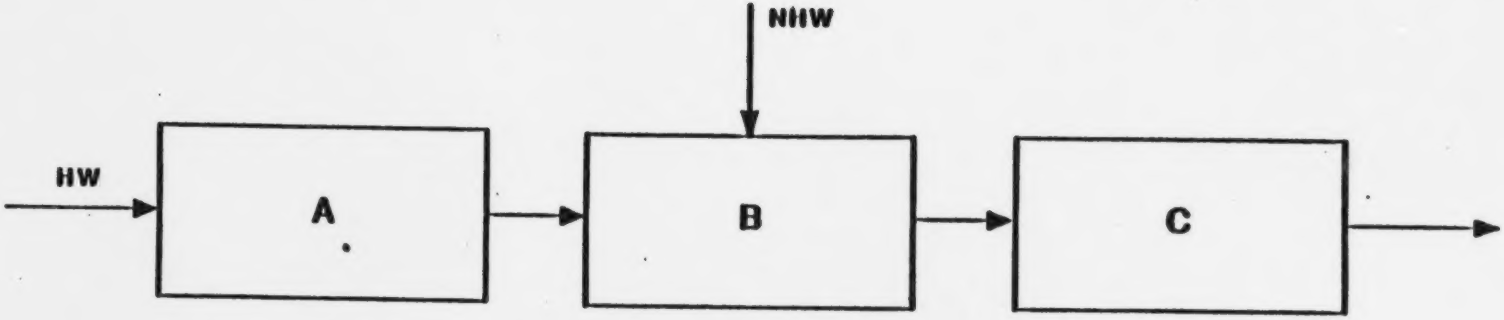
The capacity determination takes a "snapshot" approach, treating batch and continuous processes similarly by conducting a mass balance based on the amount of waste that was treated and could be treated during the entire year. Survey respondents reported unit capacities as the amount of hazardous waste entering the unit in 1986, the amount of nonhazardous waste entering the unit in 1986, the hazardous waste maximum capacity, and all waste maximum capacity. Volumes from internal recycle streams are considered in the volumes respondents reported for utilized and maximum unit capacities; therefore, recycle streams are not considered separately when conducting systems analysis.

The available capacity for each unit was calculated by subtracting the utilized from the maximum capacity. The available capacities of upstream units were compared with each unit in the process string to locate the limiting unit(s) in the system(s). The overall system capacity was based on the restrictions imposed by the limiting unit.

The above methodology assumes a 1986 baseline for hazardous and nonhazardous wastes already being treated in the system and uses only that portion of the system's remaining capacity that the respondent claims may be used for hazardous waste treatment. It was assumed that when a survey respondent reported hazardous waste maximum capacity to be less than all waste maximum capacity, the respondent considered how much nonhazardous waste must be treated using the system when reporting the hazardous waste maximum capacity for the unit.

The available capacity of a simple system is the available capacity of the limiting unit. In Figure 3-5, B is the limiting unit because it has the smallest available capacity. If one were to try to treat 50 gallons of additional hazardous waste using this system, there would be a bottleneck at unit process B because it has room for only an additional 25 gallons of waste. Therefore, the system has only 25 gallons of available hazardous waste treatment capacity. The maximum hazardous waste treatment system capacity would be 75 gallons, or 50 gallons of hazardous waste capacity already utilized plus the additional 25 gallons of available capacity based on limiting unit B.

When analyzing more complicated systems, care must be taken that the total available capacities that affect a downstream unit are considered. Referring to the unit capacities provided in Figure 3-3, if the amount of waste being treated in units A and B were increased by 300 gallons in each unit (i.e., if they were run at their maximum capacities), unit C would become a bottleneck because it has only 100 gallons of available capacity. In other words, when units directly upstream of the unit of concern are in parallel, one must add the available capacities of the upstream units before comparing them with the available capacity of the unit of concern to determine whether that unit limits (imposes a restriction on) the maximum capacity of the upstream units (Example: $A_{Avail} + B_{Avail} = 600$ gal and 600 gal $> C_{Avail}$).



A MAX = 100
A UTIL = 50
A AVAIL = 50

B MAX = 100
B UTIL = 75
B AVAIL = 25

C MAX = 130
C UTIL = 75
C AVAIL = 55

Figure 3-5 . FLOW DIAGRAM WITH UNIT CAPACITIES

The effective available capacity of an upstream unit must be calculated for comparison with the downstream unit's available capacity when only a portion of the waste treated in the upstream unit is also treated in the downstream unit of concern. Referring to Figure 3-3, the effluent stream from the clarifier being discharged under NPDES permit must be considered when determining the effect of using the available capacity of the clarifier on the available capacity of the filter press. That fraction of waste being treated in the upstream unit that continues to the downstream unit is calculated. Under the assumption that as the utilized capacities of these units are increased, the percent of waste that is treated in both upstream and downstream units remains constant, the calculated percent is applied to the reported available capacity of the upstream unit before comparing that capacity with the available capacity of the downstream unit.

In Figure 3-3, the fraction of waste (D_p) going from the clarifier to the filter press (Unit E) is calculated by:

$$D_p = \frac{E_{util}}{D_{util}} = \frac{60}{300} = 0.2.$$

Twenty percent of the waste treated by unit D gets treated by unit E. Now the available capacity of the clarifier affecting the filter press (D_{eal}) is calculated:

$$D_{eal} = (D_p)\ (D_{avail}) = (0.2)\ (100) = 20 \text{ gallons}.$$

If the amount of waste being treated in the clarifier is increased to its maximum capacity, then 20 more gallons of waste would flow to the filter press. Comparing the effective available capacities, however, indicates that the filter press limits the maximum capacity reported for the clarifier:

$$E_{avail} < D_{eal} \text{ or } 15 \text{ gallons} < 20 \text{ gallons.}$$

Considering the fact that the filter press limits the maximum capacity of the clarifier, the "new" available capacity of the clarifier must be compared to the capacity of the upstream unit, the chemical precipitation unit. The limiting effect of the filter press on the available capacity of the clarifier (D_{nac}) is quantified as follows:

$$D_{nac} = \frac{E_{avail}}{D_p} = \frac{15}{0.2} = 75 \text{ gallons.}$$

Based on the comparison of the "new" available capacity of the clarifier with the upstream chemical precipitation unit and the earlier comparison made between the chemical precipitation unit and the parallel upstream units, the filter press limits the capacities of all the other units in the process string.

At this point, the capacity analysis switches from a unit-by-unit analysis to a systems analysis. The effect of the limiting unit on the system's available and maximum capacity is determined. As previously discussed, Figure 3-3 shows three hazardous waste treatment systems. The utilized capacity of each of these systems is the amount of waste that enters each system for its respective treatments. The utilized capacities for the chromium waste treatment, cyanide waste treatment, and metals waste treatment are 100 gallons each. The available capacity of each system, as determined by the effect of the limiting unit, is 75 gallons. This quantity, which was derived above, reflects the effluent stream that exits the systems upstream from the limiting filter press. The maximum capacity of each system equals the utilized capacity of the system plus the available capacity of the system. The maximum capacities of the chromium waste, cyanide waste, and metals waste treatment systems equal 175 gallons each.

When waste treatment systems share a limiting unit, as exemplified by the three systems shown in Figure 3-3, they compete for the available capacity of that limiting unit. Because of this competition for limited capacity, these linked systems cannot all operate at their maximum capacities as calculated above. A linked system can operate at its maximum capacity only if all the other systems to which it is linked continue to operate at the utilized capacities reported for 1986. The maximum capacities of each of the linked systems serve as end points when trying to find sufficient capacity for waste volumes requiring treatment. Using the example shown in Figure 3-3 to illustrate, if additional chromium waste is sent to the chromium treatment system, then there is that much less additional capacity for cyanide waste and metals waste treatment. If the chromium waste treatment system operates at maximum capacity, then no additional waste may be sent to the cyanide waste or metals waste treatment system. A methodology was developed so that capacity tradeoffs may be made between linked systems, using more available capacity for the crucial treatment system at the expense of the maximum capacities of the other, less crucial linked systems. Tradeoffs would be determined by the demand, as quantified by the required capacity analysis, for the various types of treatment systems.

To avoid overestimating available treatment capacity and to provide a starting point upon which available capacity tradeoffs between linked systems may be made, a proportioned system capacity is calculated for linked systems. The proportioned system capacity is based on how much of the limiting unit's capacity was devoted to each linked system during the TSDR Survey base year of 1986. First, the fractional flow of hazardous waste contributed by each linked system to the limiting process is determined. Using the systems shown in Figure 3-3:

Fractional flow of chrome treatment system = CR_p

Fractional flow of cyanide treatment system = CN_p

Fractional flow of metals treatment system = M_p

$$CR_p = \frac{CR_{util}}{CR_{util} + CN_{util} + M_{util}} = \frac{100}{100 + 100 + 100} = \frac{100}{300} = 0.333$$

$$CN_p = 0.333; \ M_p = 0.333.$$

Note that M_{util} is the utilized capacity of the metals treatment system, not the utilized capacity of the chemical precipitation unit. The utilized capacity of the chemical precipitation unit is the sum total of the utilized capacities of all three systems.

The effect of the limiting unit on each available system capacity is proportioned to each system based on the fractional flow determination. Continuing the calculation to determine the proportioned available capacity (CR_{pac}) using the above example:

$$CR_{pac} = (CR_p)\ (D_{nac}) = (.333)\ (75) = 25 \text{ gallons}$$

$$CN_{pac} = (CN_p)\ (D_{nac}) = 25 \text{ gallons}$$

$$M_{pac} = (M_p)\ (D_{nac}) = 25 \text{ gallons,}$$

note that D_{nac}, the previously calculated "new available capacity" of unit D, reflects the effect that the limiting unit has on all three systems, and accounts for the effluent stream that exits the system before reaching the limiting unit.

When a linked system has an unshared limiting unit upstream from the mutually shared limiting unit of the other linked system(s), the system's calculated proportioned available system capacity must be compared with the available capacity of its limiting unit. If the limiting unit's available capacity is less than the calculated proportioned available system capacity, the final proportioned available system capacity equals the available capacity of the unshared limiting unit. The remainder of the calculated proportioned available system capacity is redistributed to the remaining linked systems based on how much the mutually shared limiting unit is devoted to the remaining linked systems. In the example shown in Figure 3-3, the limiting unit for all three systems is the shared filter press; therefore, no comparisons are necessary.

The proportioned maximum system capacity equals the utilized system capacity plus the proportioned available system capacity. The proportioned maximum system capacities (PMC) for the systems displayed in Figure 3-3 are:

$$CR_{PMC} = CR_{util} + CR_{pac} = 100 + 25 = 125 \text{ gallons}$$

$$CN_{PMC} = 125 \text{ gallons}$$

$$M_{PMC} = 125 \text{ gallons.}$$

(4) Projections of available capacity. The TSDR Survey obtained capacity data for the baseline year 1986 and for changes or new operations planned through 1992. Only capacity data presented for the years 1986, 1987, 1988, and 1989-1990, were used to support the First Third promulgated rule. Projections of capacity beyond 1986 were obtained from the TSDR Survey by engineering analysis of information regarding new treatment/recovery systems being installed and equipment changes being made to the systems operating in 1986 that result in changes in system capacity.

For new systems, capacity analysis was conducted as described above and the results were input into the treatment system data set for the appropriate years. Reported equipment changes to treatment systems operating in 1986 were examined to determine their effect on the system capacity. If the change involved the system's limiting unit or influenced the effect of a limiting unit on the system, then capacity analysis was performed again, incorporating the capacity changes for that year.

3.2.3 Development of the Treatment Capacity Data Set and Results

The treatment/recovery capacity data set consists of a PC-based incineration/reuse as fuel data set and a PC-based other treatment systems data set. System capacity data derived from data reported in the TSDR Survey, as described above, were entered onto PC data entry sheets. The purpose of these forms was to standardize information required for assessing available treatment capacity that was to be obtained from the TSDR Survey and entered into a PC-based data set. The PC-based data set is described in a report that may be found in the docket for this proposed rule (Ref. 16). A detailed discussion of the PC data entry sheets may also be found in the docket for this proposed rule (Ref. 14).

The following discussion presents the results of the incineration/reuse as fuel data set.

(1) Incineration/reuse as fuel data set results. Table 3-1 summarizes the commercial capacity for hazardous waste incineration. This table presents the utilized, maximum, and available capacity for incineration of liquids, sludges, solids, and gases in 1986, and maximum and available capacity for 1987, 1988, 1989, and 1990. The analysis assumes that hazardous waste capacity not utilized in 1986, as well as all new hazardous waste capacity from 1987 and beyond, will be available for incineration of hazardous wastes.

Table 3-1 Commercial Hazardous Waste Incineration Capacity (Million Gallons/Year)

Physical form of waste	1986			1987		1988		1989-1990	
	Utilized capacity	Maximum capacity	Available capacity	Maximum capacity	Available capacity[a]	Maximum capacity	Available capacity[a]	Maximum capacity	Available capacity[a]
Liquids	62	79	17	100	38	131	68	310	247
Sludges	3	8	5	8	5	14	11	97	94 [b]
Solids	17	27	10	27	10	50	33	183	166 [b]
Gases	0	1	1	1	1	2	2	2	2
	—	—	—	—	—	—	—	—	—
TOTAL	82	115	33	136	54	197	114	592	509

Source: TSDR Survey results as of October 1988.

[a] Projected based on maximum capacity for that year minus utilized capacity for 1986. This considers that capacity not utilized in 1986 and all new capacity (from 1987 and beyond) will be available for incineration of hazardous wastes being land disposed that may be affected by the land disposal restrictions.

[b] Includes 8 million gallons of sludges capacity and 13 million gallons of solids capacity planned to be available prior to June 1989 and, therefore, included as available for this rule.

Table 3-2 summarizes the commercial capacity of industrial kilns for reusing hazardous wastes as fuel. The table presents the utilized, maximum, and available capacity for combustion of liquids, sludges, and solids as fuel in 1986, and maximum and available capacity for 1987, 1988, and 1989-1990. Again, the analysis assumes that hazardous waste capacity not utilized in 1986, and all new hazardous waste capacity from 1987 and beyond, will be available for combustion of hazardous wastes.

(2) Development of the PC date set for other treatment systems. PC data entry sheets were filled out for other treatment systems, and the data were entered into a PC-based data set. The data set contains data entry fields as well as calculated fields used to perform the capacity analysis. A more detailed explanation of the data fields contained in the data set may be found in a report in the docket for this proposed rule (Ref. 16).

The data set has four major treatment system categories, each of which is divided into subcategories. A more detailed discussion of how and why the categories were developed is given below. The categories and subcategories, along with the codes used to represent them within the data set, are listed as follows:

I. Wastewater Treatment

Process	Code
- Cyanide Oxidation	WW, CO
- Chrome Reduction	WW, CR
- Organics/Metals Treatment	WW, OMT
- Organics/Metals Biological Treatment	WW, OMB

Table 3-2 Commercial Capacity of Industrial Kilns for "Reuse as Fuel" of Hazardous Waste (Million Gallons/Year)

	1986			1987		1988		1989-1990	
Physical form of waste	Utilized capacity	Maximum capacity	Available capacity	Maximum capacity	Available capacity[a]	Maximum capacity	Available capacity[a]	Maximum capacity	Available capacity[a]
Liquids	80	270	190	317	237	287	207	416	336
Sludges	<1	<1	<1	1	1	2	2	60	60 [b]
Solids	<1	1	1	1	1	1	1	1	1
TOTAL	80	271	191	319	239	290	210	477	397

Source: TSDR Survey results as of October 1988.

NOTE: For cases where capacity was added to existing units or new units were added, all facilities indicated that new capacity would be available 100 percent for hazardous waste.

[a] Projected based on maximum capacity for that year minus utilized capacity for 1986. This considers that capacity not utilized in 1986 and all new capacity (from 1987 and beyond) will be available for burning (reuse as fuel) of hazardous wastes being land disposed that may be affected by the land disposal restrictions.

[b] Includes 54 million gallons of capacity planned to be available prior to June 1989 and, therefore, included as available for this rule.

I. Wastewater Treatment (continued)

Process	Code
- Sulfide Precipitation	WW, SP
- General Chemical Precipitation	WW, GCP
- Steam Stripping	WW, SS
- Air Stripping	WW, AS
- Biological Treatment	WW, BT
- Carbon Adsorption	WW, CA
- General Oxidation	WW, GO
- Wet Air Oxidation	WW, WAO
- Neutralization	WW, N

II. Solvent Recovery

Process	Code
- Thin Film Evaporation	SR, TF
- Fractionation/Distillation	SR, FD
- Solvent Extraction	SR, SE
- Other Solvent Recovery	SR, O

III. Metals Recovery

Process	Code
- High Temperature Metals Recovery	MR, HT
- Retorting	MR, R
- Secondary Smelting	MR, SS
- Other Metals Recovery	MR, OMR

IV. Solidification

Process	Code
- Solidification	SL, S

The maximum, utilized, and available capacities were totaled for all systems in the data base that fell under each category. Each category is mutually exclusive so that the capacity of a treatment system would not be double-counted. The treatment systems were categorized by using the computer to search each record for key unit types (process codes) that would identify the appropriate category under which the system should be placed. For example, records indicating systems with unit types identified by process codes 2WT, 3WT, 4WT, or 5WT, and 10WT through 15WT were categorized under cyanide oxidation. These categories are used because the BDAT program has identified them as treatment methods that may be effective in attaining the treatment standards established under the solvents and dioxins, California List, and First Third final rulemakings, and the Second Thirds proposed rule.

(3) Treatment capacity data set results. Only a subset of the treatment systems that compose the treatment capacity data set was required by the Second Third proposed wastes. These treatment categories have been identified under the BDAT program as being effective in attaining the applicable treatment standards. Under each category, only commercial treatment systems were aggregated to establish a national supply of available treatment capacity that may be used to meet the demand created by the Land Disposal Restriction Rules.

Table 3-3 presents the maximum, utilized, and available capacities of commercial treatment systems (other than combustion) of concern for reporting baseline year 1986 and capacity projections through 1990. When making these projections, the 1986 utilized capacities of these treatment systems were assumed to remain constant for the subsequent years. Where a linked system exists, the proportioned system capacity for the linked system is used to avoid overestimating available capacity. For commercial treatment systems that closed between 1986 and 1988 or will

Table 3-3 Commercial Treatment System Capacities (Million Gallons/Year)[a]

Technology description	Utilized	1986		1987		1988		1989-1990	
		Maximum capacity	Available capacity	Maximum capacity	Available capacity	Maximum capacity	Available capacity	Maximum capacity	Available capacity
Stabilization (cement and pozzolonic)	118	580	463	589	472	617	499	1,569	1,452
High temperature metals recovery	34	67	34	67	34	67	34	67	34
Cyanide oxidation and chemical precipitation	30	105	75	105	75	189	159	201	171
Chromium reduction and chemical precipitation	177	379	202	379	202	437	260	437	261
Carbon adsorption and chromium reduction/chemical precipitation	4	16	12	16	12	16	12	16	12
Carbon adsorption and chemical precipitation	6	33	28	33	28	42	37	106	101
Chemical precipitation	89	222	133	222	133	222	133	255	166
Sulfide precipitation	64	320	256	319	255	319	255	334	270
Neutralization	18	51	33	51	33	95	77	96	78
Steam stripping	1	12	11	12	11	12	11	12	11
Carbon adsorption	5	7	2	7	2	7	2	19	14
Biological treatment	106	140	35	140	35	157	51	157	51
Wet air oxidation	3	3	<1	<1	<1	5	2	5	2
Secondary smelting	47	56	9	79	32	93	46	95	48
Fractionation/distillation	37	100	63	112	74	109	72	116	78
Solvent extraction	<1	1	1	1	1	1	1	1	1
Thin film evaporation	38	80	42	89	51	95	57	136	98

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[a] Numbers may not add exactly because of rounding.

close in 1989 or 1990, the utilized capacity of that system remained in the analysis under the assumption that the waste volumes the system was treating will require commercial capacity elsewhere. Keeping the utilized capacity of the closed system in the analysis results in reducing the available commercial capacity for that category. The data in this table were summarized from a report on commercial treatment capacity (Ref. 16).

Table 3-4 is a summary of the 1988 capacity data for all commercial treatment systems of concern for this proposed rule. The combustion data include incineration and reuse as fuel in industrial kilns. These data represent the supply (available capacity) for the demand (required capacity) presented earlier.

3.3 Capacity Analysis (Comparison of Required and Available Treatment Capacity)

As previously described, the Agency is responsible for determining whether sufficient capacity exists to meet the requirements of the land disposal restrictions. This involves the comparison of required and available capacity. Available treatment capacity can be obtained from the following sources:

- Onsite (private capacity) - facilities that manage only waste generated onsite.
- Captive capacity - facilities that manage only waste from other facilities under the same ownership.
- Limited commercial capacity - facilities that manage waste from a limited number of facilities not under the same ownership.
- Commercial capacity - facilities that manage waste from any facility.

Information on limited and captive capacity was not available in time to be incorporated into the analysis for this proposed rule. The Agency does not believe, however, that capacity from these sources would have effected the variance decisions. The data set does contain information on commercial capacity from baseline year 1986 and information on planned

Table 3-4 Overview: 1988 Capacity for Alternative Treatment/Recovery Technologies[a]

Technology description	Maximum capacity (million gallons/year)	Utilized capacity (million gallons/year)	Available capacity (million gallons/year)
Combustion[b]			
- Liquids	471	142	329
- Sludges/solids	142	20	122
Stabilization	617	118	499
Solvent extraction	1	<1	1
Metals recovery			
-- High temperature metals recovery (not secondary smelting as identified in the TSDR Survey)	67	34	34
Wastewater treatment			
- Cyanide oxidation, chemical precipitation, and settling/filtration	189	30	159
- Chromium reduction, chemical precipitation, and settling/filtration	437	177	260
- Carbon adsorption and chromium reduction, chemical precipitation, and settling/filtration	16	4	12
- Neutralization	95	18	77
- Steam stripping	12	1	11
- Carbon adsorption	7	5	2
- Biological treatment	157	106	51
- Wet air oxidation	5	3	2
Sludge treatment			
- Acid leaching, chemical oxidation, and dewatering of sludge and sulfide precipitation of effluent	0	0	0

[a] Numbers may not add exactly because of rounding.

[b] Includes additional planned to be available before June 8, 1989.

changes to 1986 management methods and new processes to be installed from 1987 through 1992. The methodology for determining the amount of available treatment capacity was described in Section 3.2.

Required capacity consists of wastes previously land disposed that will require treatment to meet a treatment standard prior to being land disposed. These volumes of waste were identified and underwent treatability analysis as was described in Section 3.1. The result of the treatability analysis was the assignment of waste volumes to treatability subgroups.

The comparison of required and available capacity was performed on a facility-by-facility basis. This was done to match treatability subgroups with available capacity of applicable treatment/recovery systems. Available onsite treatment capacity was matched only to volumes that were previously land disposed onsite and were determined to require alternative treatment. If the appropriate treatment/recovery technology was not available onsite, or if adequate available capacity was not present to manage the waste, then the remaining volume of waste requiring alternative treatment was aggregated into a national demand for commercial capacity. The final aggregate of national demand was then compared with the final estimates of national commercial capacity to match treatability subgroups with appropriate treatment technologies. This methodology was used by the Agency to make final determinations concerning variances.

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APPENDIX A

Capacity Analysis for Second Third Proposed Wastes

APPENDIX A

The tables in this appendix present the results of the analysis of required capacity for each alternative technology on a waste code-by-waste code basis. The tables show the amount of required treatment capacity for the Second Third proposed waste codes. The tables also total the amount of required capacity for each technology.

The original TSDR Survey data were sorted by waste code, waste description code, and type of alternative treatment required to generate these tables. Computer printouts showing the original TSDR Survey data for the Second Third proposed wastes are contained in Appendix C. The data were then combined and summarized to create the technology-specific capacity analysis tables for the Second Third proposed wastes contained in Section 2 of this document.

APPENDIX A

Capacity Analysis by Technology per Waste Group/Code for Second Third Proposed Wastes

Technology: Combustion of liquids

Waste code	Required capacity 1988 Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
F010	77,952	0
F024	9,360	0
K011	49,920	145,176,680
K013	0	145,176,680
P039	295	0
P044	960	0
P063	0	56,300,000
P089	27,360	1,200
P094	1,200	0
U087	0	960
U190	22,560	90,000
U221	0	26,824,080
U223	58,800	90,000
Totals	248,407	373,659,600

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Combustion of sludges/solids

Waste code	Required capacity 1988 Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
F008	17,400	0
F019	1,680	0
F024	62,880	0
K011	101,736	0
K013	103,056	0
K014	16,008	0
K027	7,486,624	0
K093	36,480	0
K094	36,480	0
K115	161,760	0
P071	25,896	0
U028	480	0
U190	51,780	0
U221	305,760	0
Totals	8,408,020	0

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Stabilization of incinerator ash

	Required capacity 1988	
Waste code	Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
F008	3,216	0
F010	7,795	0
F019	168	0
F024	24,336	0
K011	19,245	1,451,766
K013	18,818	1,451,766
K014	1,600	0
K027	78,936	0
U221	4,968	0
Totals	159,082	2,903,532

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Stabilization of scrubber water treatment sludge

Waste code	Required capacity 1988 Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
F008	174	0
F010	780	0
F019	17	0
F024	629	0
K011	1,019	1,451,766
K013	1,030	1,451,766
K014	160	0
K027	74,866	0
U221	55	0
Totals	78,730	2,903,532

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Cyanide destruction

Waste code	Required capacity 1988	
	Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
F007	578,141	126,193,680
F008	1,023,202	15,120
F009	45,251	42,480
F011	82,820	0
F012	63,572	0
F019	3,016,174	0
P029	0	1,512
P030	21,382	22,552
P063	98,808	0
P069	240	0
P071	0	1,920
P098	192	2,952
P106	4,975	0
Totals	5,012,709	126,280,216

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Chromium reduction and chemical precipitation

Waste code	Required capacity 1988 Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
F007	0	113,040
F009	0	6,480
Totals	0	119,520

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Steam stripping and/or biological treatment

		Required capacity 1988	
Waste code		Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
K009		0	54,370,000
K010		0	54,370,000
	Totals	0	108,740,000

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Wet air oxidation and biological treatment

Waste code	Required capacity 1988 Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
K011	0	364,563,440
K013	0	338,525,600
K014	0	126,309,600
P063	0	128,000,000
Totals	0	957,398,640

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Stabilization of wastewater treatment sludge

Waste code	Required capacity 1988 Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
F007	470,514	1,274,022
F008	1,000,347	3,209
F009	10,595	489
F010	45,420	0
F011	49,219	0
F012	61,290	0
F019	2,986,012	0
P029	0	15
P030	0	15
P098	2	15
P106	2	15
Totals	4,623,401	1,277,780

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Stabilization

Waste code	Required capacity 1988 Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
F007	242,618	0
F008	355,675	240
F009	242,018	0
F011	3,788	0
F019	3,531,762	1,440
Totals	4,375,261	1,680

Source: TSDR Survey.

APPENDIX A (continued)

Second Third Proposed Wastes

Technology: Secondary smelting

Waste code	Required capacity 1988 Non-deepwell volume (gallons/year)	Deepwell volume (gallons/year)
K002	425,832	0
K003	425,832	0
K006	412,752	0
Totals	1,264,416	0

Source: TSDR Survey.

APPENDIX B

Capacity Analysis for Contaminated Soil Wastes

APPENDIX B

The tables in this appendix present the results of the analysis of required capacity for each alternative technology for contaminated soils. The tables show the amount of required capacity for each technology.

To generate these tables, the original TSDR Survey data were sorted by waste code, waste description code (i.e., those described as soils), and type of alternative treatment required. Computer printouts showing the original TSDR Survey data for Second Third proposed wastes are contained in Appendix C. The data were then combined and summarized to create the technology-specific capacity analysis tables for contaminated soils contained in Section 2 of this document.

APPENDIX B

Capacity Analysis by Technology per Waste Group/Code for Contaminated Soil Wastes

Technology: Combustion of soils

	Required capacity 1988
Solvents	25,736,413
First Third promulgated wastes	11,699,109
HOCs (Soft hammer First Third and not First Third)	4,174,281
Second Third proposed wastes	
F007	782,258
F008	596,635
F009	242,018
F010	480
F011	3,788
F019	56,358
K011	120
K013	120
K113	240
P029	240
P030	7,350
P044	1,680
P063	15,360
P071	46,980
P094	36,600
P106	480
U028	386,160
U069	1,440
U190	11,550
U221	97,200
U223	6,000
Total	43,902,860

Source: ISDR Survey.

APPENDIX B (Continued)

Technology: Stabilization of incinerator ash from the combustion of soils

	Required capacity 1988
Solvents	9,736,000
First Third promulgated wastes	11,459,929
HOCs (Soft hammer First Third and not First Third)	0
Second Third proposed wastes	
F007	774,435
F008	590,669
F009	239,598
F010	475
F011	3,750
F019	55,795
K011	118
K013	118
K113	238
P029	238
P094	48
Total	22,861,411

Source: TSDR Survey.

APPENDIX B (Continued)

Technology: Stabilization of scrubber water treatment sludge from the combustion of soils

	Required capacity 1988
Solvents	99,689
First Third promulgated wastes	116,087
HOCs (Soft hammer First Third and not First Third)	0
Second Third proposed wastes	
F007	7,823
F008	5,966
F009	2,420
F010	5
F011	38
F019	564
K011	1
K013	1
K113	2
P029	2
P094	1
Total	232,599

Source: TSDR Survey.

APPENDIX C

Raw Data Used for Capacity Analysis

APPENDIX C

This appendix presents the TSDR Survey data used for the capacity analysis for Second Third proposed wastes. The tables present the following data fields on a waste stream-specific basis:

- EPA waste code
- WDESC = waste description code (a definition of each code has been included as Attachment 2 to this appendix)
- FCID = facility EPA ID number
- Facility name
- BOOK = TSDR booklet (J = waste piles, K = surface impoundments, L = landfills, M = land treatment, N = underground injection)
- RECTYPE and KEYLTR identify TSDR Survey question number for the waste stream
- QTY8 = the quantity requiring alternative treatment (this quantity is adjusted for the closure, replacement, or retrofitting of surface impoundments)
- UOM = unit of measure (G = gallons, T = tons, M = million gallons)
- TRD = treatability group (the alternative technologies associates with each treatability group are contained in Appendix D)
- ATR = alternative treatment/recovery technology code (the technologies associated with each code are contained in Appendix E)
- AVAIL = identifies if the ATR is available onsite

ATTACHMENT 1

Waste Stream-Specific Data

NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

C-3

RCRA WASTE CODE=F007 WDESC=A06

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR6	AVAIL6
AZD009005422	HUGHES AIRCRAFT CO USAF PLANT 44	K	65	A	~~[illegible]~~ 0	~~G~~	~~10~~	~~12~~	~~N~~	~~[illegible]~~	~~N~~	~~[illegible]~~	~~N~~				
CAD020748125	CASMALIA RESOURCES	K	61	C	46.0	T	10	12	N	13	N	49	N				
CAT000646117	CHEMICAL WASTE MANAGEMENT	K	65	B	0.0	G											

RCRA WASTE CODE=F007 WDESC=A06

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
OHD045243706	ENVIROSAFE SERVICES OF OHIO, INC.	I	31	I	14.0	T	66	14	N	50	N						
OHD087433744	CECOS INTERNATIONAL INC	I	31	I	2164.0	T	66	14	N	50	N						

```
                                  REQUEST FOR TIM HOLDEN                        19:38 Thursday, October 20, 1988  16
                           PREPARED BY OPRA, REQUEST NUMBER C0053A
                                  DATA SOURCE: TSDF SOURCE

                        NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------- RCRA WASTE CODE-F007 WDESC-A07 ---------------------------------------------

                                                             R
                                                             E  K                    A      A      A      A      A
F            N                                               C  E                    V      V      V      V      V
C            A                                            B  T  Y       Q U      A   A  A   A  A   A  A   A  A   A
I            M                                            O  Y  L       T O  T   T   I  T   I  T   I  T   I  T   I
D            E                                            O  P  T       Y M  R   R   L  R   L  R   L  R   L  R   L
                                                          K  E  R       8 8  D   1   1  2   2  3   3  4   4  6   6

ARD047336922 REMINGTON ARMS CO INC-LONOKE PLANT           K 66  B     0.0
CAD020748125 CASMALIA RESOURCES                           L 31  V    10.0 T 10  12   N 13   N 49   N
CTD000842492 GE WASTE WATER FACILITY                      K 66  A     0.0
MID000724831 MICHIGAN DISPOSAL INC                        J 34  F   112.0 T 10  12   N 13   N 49   N
NYD080336241 CECOS INTERNATIONAL                          K 67  F     0.0 T
OHD055522429 ERIEWAY POLLUTION CONTROL INC.               J 34  B   110.0 T 10  12   N 13   N 49   N
OKD001824564 AMERICAN AIRLINES INC.                       N 20  A   126.0 N 10  12   N 13   N
PAD059087072 MILL SERVICE INC.                            K 61  B    76.0 T
PAD085690592 WASTE CONVERSION INC.                        J 34  F    21.0 T 10  12   N 13   N 49   N
PAD085690592 WASTE CONVERSION INC.                        J 40  F    22.0 T
TND042205971 SANYMETAL PRODUCTS COMPANY INC.              K 66  A     0.0 T
TND042205971 SANYMETAL PRODUCTS COMPANY INC.              K 66  B     0.0 T
TXD027147116 MALONE SERVICE CO                            N 20  C   276.0 T
TXD091270017 CECOS INTERNATIONAL INC.                     N 20  J   486.0 T 10  12   N 13   N 49   N

------------------------------------- RCRA WASTE CODE-F007 WDESC-AEA ---------------------------------------------

                                                             R
                                                             E  K                    A      A      A      A      A
F            N                                               C  E                    V      V      V      V      V
C            A                                            B  T  Y       Q U      A   A  A   A  A   A  A   A  A   A
I            M                                            O  Y  L       T O  T   T   I  T   I  T   I  T   I  T   I
D            E                                            O  P  T       Y M  R   R   L  R   L  R   L  R   L  R   L
                                                          K  E  R       8 8  D   1   1  2   2  3   3  4   4  6   6

NYD080336241 CECOS INTERNATIONAL                          L 31  G    20.0 T 66  14   N 60   N
UTD991301740 US POLLUTION CONTROL INC GRASSY MTN FAC      L 31  N    81.0 T 11  14   N 13   N 60   N

------------------------------------- RCRA WASTE CODE-F007 WDESC-B -----------------------------------------------

                                                             R
                                                             E  K                    A      A      A      A      A
F            N                                               C  E                    V      V      V      V      V
C            A                                            B  T  Y       Q U      A   A  A   A  A   A  A   A  A   A
I            M                                            O  Y  L       T O  T   T   I  T   I  T   I  T   I  T   I
D            E                                            O  P  T       Y M  R   R   L  R   L  R   L  R   L  R   L
                                                          K  E  R       8 8  D   1   1  2   2  3   3  4   4  6   6

MID0054[illegible] [illegible]                            K [illegible] A     0.0
```

Reproduced from best available copy.

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NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

RCRA WASTE CODE-F007 WDESC-B05

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
OKD000402396	CHEMICAL RESOURCES INC	N	24	C	27.0	T	14	17	N								

RCRA WASTE CODE-F007 WDESC-B07

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
IND000806836	GMC ALLISON GAS TRUBINE	K	69	A	0.0	G											
NYD002076214	WHITE MOP WRINGER	K	71	A	0.0												

RCRA WASTE CODE-F007 WDESC-B14

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
CTD050865072	TECH SYSTEMS CORP	K	69	A	0.0	G											

RCRA WASTE CODE-F007 WDESC-B37

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
[illegible]	[illegible]	I	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	14	N	50	N						

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```
                              REQUEST FOR TIM HOLDEN                               19:38 Thursday, October 20, 1988  17
                    PREPARED BY OPRA, REQUEST NUMBER C0063A
                            DATA SOURCE: FSDR SOURCE

                   NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

--------------------------------- RCRA WASTE CODE=F007 WDESC=040 ---------------------------------

                                                     R
                                                     E   K                      A      A      A      A      A
                                                     C   E                      V      V      V      V      V
F             N                                   B  T   Y        Q  U      A   A  A   A  A   A  A   A  A   A
C             A                                   O  Y   L        T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                                   O  P   T        Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                                   K  E   R        8  8  D   1   1  2   2  3   3  4   4  5   5
                                                                        56  51  N
ILD010284248  CID LANDFILL                        L  36  AU  242010.3  6  66  14  N  60  N

--------------------------------- RCRA WASTE CODE=F007 WDESC=041 ---------------------------------

                                                     R
                                                     E   K                      A      A      A      A      A
                                                     C   E                      V      V      V      V      V
F             N                                   B  T   Y        Q  U      A   A  A   A  A   A  A   A  A   A
C             A                                   O  Y   L        T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                                   O  P   T        Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                                   K  E   R        8  8  D   1   1  2   2  3   3  4   4  5   5
                                                                        18  19
ILD010284248  CID LANDFILL                        L  36  AT  242010.3  6  66  14  N  60  N

--------------------------------- RCRA WASTE CODE=F007 WDESC=046 ---------------------------------

                                                     R
                                                     E   K                      A      A      A      A      A
                                                     C   E                      V      V      V      V      V
F             N                                   B  T   Y        Q  U      A   A  A   A  A   A  A   A  A   A
C             A                                   O  Y   L        T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                                   O  P   T        Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                                   K  E   R        8  8  D   1   1  2   2  3   3  4   4  5   5

UTD991301748  US POLLUTION CONTROL INC GRASSY MTN FAC  L  36  D   104.0  T  66  14  N  60  N

--------------------------------- RCRA WASTE CODE=F007 WDESC=047 ---------------------------------

                                                     R
                                                     E   K                      A      A      A      A      A
                                                     C   E                      V      V      V      V      V
F             N                                   B  T   Y        Q  U      A   A  A   A  A   A  A   A  A   A
C             A                                   O  Y   L        T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                                   O  P   T        Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                                   K  E   R        8  8  D   1   1  2   2  3   3  4   4  5   5

TXD027147115  NALCO [illegible] SERVICE CO        N  4   AT      2.0  T  66  14  N  50  N
```

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REQUEST FOR FIN HOLDEN
PREPARED BY OPRA, REQUEST NUMBER C0053A
DATA SOURCE: TSDR SOURCE

NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

RCRA WASTE CODE-F007 WDESC-B62

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
TXD027147115	MALONE SERVICE CO	N	24	AH	46.0	T	11	14	N	13	N	50	N				

RCRA WASTE CODE-F007 WDESC-B10

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
MID048090633	WAYNE DISPOSAL INC SITE 02	L	35	B	109.0	T	66	14	N	60	N						

RCRA WASTE CODE-F008 WDESC-A06

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
AZD009005422	HUGHES AIRCRAFT CO USAF PLANT 44 (4)	K	66	B	O ~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~[illegible]~~	~~N~~	~~[illegible]~~	~~N~~	~~[illegible]~~	~~N~~				
CAD020748125	CASMALIA RESOURCES	L	31	W	4.0	T	10	12	N	13	N	49	N				
CAT000646117	CHEMICAL WASTE MANAGEMENT	K	55	C	0.0	G											
CTD001181502	AVCO LYCOMING TEXTRON STRATFORD	K	67	B	0.0												
LAD000618256	CECOS INTERNATIONAL INC.	K	66	H	50.0	T	10	12	N	13	N	49	N				
LAD000618256	CECOS INTERNATIONAL INC.	N	20	H	50.0	T	10	12	N	13	N	49	N				
SCD067002147	GE FLORENCE PLANT	K	55	A	0.0												

C-7

REQUEST FOR TIM HOLDEN
PREPARED BY OPRA, REQUEST NUMBER C0063A
DATA SOURCE: TSDR SOURCE

NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

RCRA WASTE CODE=F008 WDESC=A06

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
CAD020740125	CASMALIA RESOURCES	L	31	X	2.0	T	~~66~~ 66	~~13~~ 14	~~N~~ N	~~13~~ 50	~~N~~ N	~~40~~	~~N~~				
ILD010284248	CID LANDFILL	L	31	X	113667.0	G	66	14	N	60	N						
OHD045243706	ENVIROSAFE SERVICES OF OHIO, INC.	L	31	G	236.0	T	66	14	N	60	N						
OHD087433744	CECOS INTERNATIONAL INC	L	31	G	369.0	T	66	14	N	60	N						

RCRA WASTE CODE=F008 WDESC=A07

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
ARD047335922	REMINGTON ARMS CO INC-LONOKE PLANT	K	65	C	0.0	T											
CAD000060012	IT CORP BENICIA	K	65	D	133200.0	G	11	14	N	13	N	60	N				
CAD000060012	IT CORP BENICIA	L	31	G	233.0	T	11	14	N	13	N	60	N				
ILD010284248	CID LANDFILL	L	31	V	113667.0	G	11	14	N	13	N	60	N				
MID000724831	MICHIGAN DISPOSAL INC	J	34	G	66.0	T	11	14	N	13	N	60	N				
NYD000336241	CECOS INTERNATIONAL	K	67	G	0.0	T											
OHD055522429	ERIEWAY POLLUTION CONTROL INC.	J	34	C	135.0	T	11	14	N	13	N	60	N				
OKD065438376	USPCI	L	31	F	14.0	T	11	14	N	13	N	60	N				
PAD085690592	WASTE CONVERSION INC.	J	34	G	22.0	T	11	14	N	13	N	60	N				
PAD085690592	WASTE CONVERSION INC.	J	40	G	~~34.0~~	~~T~~											
TXD000719518	DISPOSAL SYSTEMS INC- DEER PARK	N	20	C	13.0	T	11	14	N	13	N	60	N				

RCRA WASTE CODE=F008 WDESC=A07

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
CAD020740125	CASMALIA RESOURCES	L	31	Y	3.0	T	11	14	N	13	N	50					

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```
                    REQUEST FOR TIM HOLDEN                          19:38 Thursday, October 20, 1988  20
             PREPARED BY DPRA, REQUEST NUMBER C0863A
                     DATA SOURCE: TSDR SOURCE

            NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------- RCRA WASTE CODE-F008 WDESC-A11 ---------------------------------------

                                          R
                                          E  K                          A     A     A     A     A
                                          C  E                          V     V     V     V     V
F              N                       B  T  Y        Q  U     A        A  A  A  A  A  A  A  A  A
C              A                       O  Y  L        T  O  T  T        I  T  I  T  I  T  I  T  I
I              M                       O  P  T        Y  M  R  R        L  R  L  R  L  R  L  R  L
D              E                       K  E  R        8  8  D  1        1  2  2  3  3  4  4  5  5

ILD010284248   CID LANDFILL            L  31 Y  113667.0  G 66 51       N

------------------------------- RCRA WASTE CODE=F008 WDESC=A12 ---------------------------------------

                                          R
                                          E  K                          A     A     A     A     A
                                          C  E                          V     V     V     V     V
F              N                       B  T  Y        Q  U     A        A  A  A  A  A  A  A  A  A
C              A                       O  Y  L        T  O  T  T        I  T  I  T  I  T  I  T  I
I              M                       O  P  T        Y  M  R  R        L  R  L  R  L  R  L  R  L
D              E                       K  E  R        8  8  D  1        1  2  2  3  3  4  4  5  5
                                                            13 19
ILD010284248   CID LANDFILL            L  31 W  113667.0  G 66 51       N
TXD027147115   MALONE SERVICE CO       N  20 E       1.0  T 11 10       N

------------------------------- RCRA WASTE CODE=F008 WDESC=AEA ---------------------------------------

                                          R
                                          E  K                          A     A     A     A     A
                                          C  E                          V     V     V     V     V
F              N                       B  T  Y        Q  U     A        A  A  A  A  A  A  A  A  A
C              A                       O  Y  L        T  O  T  T        I  T  I  T  I  T  I  T  I
I              M                       O  P  T        Y  M  R  R        L  R  L  R  L  R  L  R  L
D              E                       K  E  R        8  8  D  1        1  2  2  3  3  4  4  5  5

LAD000618298   CECOS INTERNATIONAL INC L  31 G      34.0  T 66 14       N 50 N
NYD080336241   CECOS INTERNATIONAL     L  31 H     720.0  T 66 14       N 50 N

------------------------------- RCRA WASTE CODE-F008 WDESC-B -----------------------------------------

                                          R
                                          E  K                          A     A     A     A     A
                                          C  E                          V     V     V     V     V
F              N                       B  T  Y        Q  U     A        A  A  A  A  A  A  A  A  A
C              A                       O  Y  L        T  O  T  T        I  T  I  T  I  T  I  T  I
I              M                       O  P  T        Y  M  R  R        L  R  L  R  L  R  L  R  L
D              E                       K  E  R        8  8  D  1        1  2  2  3  3  4  4  5  5

LAD000618298   CECOS INTERNATIONAL INC L  35 A1      1.0  T 11 14       N 13  N 50 N
MID005422514   [illegible] HARTFORD INC K 59 A        0.0
```

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```
                         REQUEST FOR TIM HOLDEN                    19:30 Thursday, October 20, 1988  21
                  PREPARED BY OPRA, REQUEST NUMBER C0053A
                         DATA SOURCE: TSDR SOURCE

             NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------ RCRA WASTE CODE-F008 WDESC-007 ------------------------------------

                                                R                                       
                                                E  K                   A     A     A     A     A
                                                C  E                   V     V     V     V     V
F            N                               B  T  Y      Q  U      A  A  A  A  A  A  A  A  A  A
C            A                               O  Y  L      T  O  T   T  I  T  I  T  I  T  I  T  I
I            M                               O  P  T      Y  M  R   R  L  R  L  R  L  R  L  R  L
D            E                               K  E  R      8  8  D   1  1  2  2  3  3  4  4  5  5

NYD002076214 WHITE MOP WRINGER               K  71 A    0.0

------------------------------------ RCRA WASTE CODE-F008 WDESC-008 ------------------------------------

                                                R
                                                E  K                   A     A     A     A     A
                                                C  E                   V     V     V     V     V
F            N                               B  T  Y      Q  U      A  A  A  A  A  A  A  A  A  A
C            A                               O  Y  L      T  O  T   T  I  T  I  T  I  T  I  T  I
I            M                               O  P  T      Y  M  R   R  L  R  L  R  L  R  L  R  L
D            E                               K  E  R      8  8  D   1  1  2  2  3  3  4  4  5  5

VAD003132430 GENICOM CORP.                   K  69 A    0.0  G
                                             F008|031   1,000 G  H  14 N 13 N 50 N
------------------------------------ RCRA WASTE CODE-F008 WDESC-014 ------------------------------------

                                                R
                                                E  K                   A     A     A     A     A
                                                C  E                   V     V     V     V     V
F            N                               B  T  Y      Q  U      A  A  A  A  A  A  A  A  A  A
C            A                               O  Y  L      T  O  T   T  I  T  I  T  I  T  I  T  I
I            M                               O  P  T      Y  M  R   R  L  R  L  R  L  R  L  R  L
D            E                               K  E  R      8  8  D   1  1  2  2  3  3  4  4  5  5

CTD058865072 TECH SYSTEMS CORP               K  69 A    0.0  G

------------------------------------ RCRA WASTE CODE-F008 WDESC-024 ------------------------------------

                                                R
                                                E  K                   A     A     A     A     A
                                                C  E                   V     V     V     V     V
F            N                               B  T  Y      Q  U      A  A  A  A  A  A  A  A  A  A
C            A                               O  Y  L      T  O  T   T  I  T  I  T  I  T  I  T  I
I            M                               O  P  T      Y  M  R   R  L  R  L  R  L  R  L  R  L
D            E                               K  E  R      8  8  D   1  1  2  2  3  3  4  4  5  5

CAD000060012 [illegible] CORP BENICIA        K  59 B    4549.5 G  H  14 N 15 N 50 N
```

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REQUEST FOR TIN HOLDER
PREPARED BY OPRA, REQUEST NUMBER C0063A
DATA SOURCE: TSDR SOURCE

NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

RCRA WASTE CODE-F000 WDESC-B36

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
OHD045243706	ENVIROSAFE SERVICES OF OHIO, INC.	L	36	CO	397.0	T	~~5~~ 20	~~2~~ 7	N								

RCRA WASTE CODE-F000 WDESC-B37

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
ILD010284248	CID LANDFILL	L	36	AS	242010.3	6	66	14	Y	50	N						

RCRA WASTE CODE-F000 WDESC-B40

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
ILD010284248	CID LANDFILL	L	36	AU	242010.3	6	~~66~~ 56	~~14~~ 57	~~N~~ N	~~50~~	~~N~~						

RCRA WASTE CODE-F000 WDESC-B41

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
ILD010284248	CID LANDFILL	L	36	AT	242010.3	6	~~66~~ 18	~~14~~ 10	~~N~~ N	~~50~~	~~N~~						

NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

RCRA WASTE CODE-F008 WDESC-B62

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTYB	UOMB	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
OHD087433744	CECOS INTERNATIONAL INC	L	35	X	4.0	T	~~20~~ 60	~~7~~ 14	~~N~~ N	50	N						

RCRA WASTE CODE-F008 WDESC-B09

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTYB	UOMB	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
OHD087433744	CECOS INTERNATIONAL INC	L	36	U	69.0	T	20	7	N								

RCRA WASTE CODE-F008 WDESC-B90

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTYB	UOMB	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
OHD087433744	CECOS INTERNATIONAL INC	L	35	B1	2.5	T	20	7	N								

RCRA WASTE CODE-F008 WDESC-B10

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTYB	UOMB	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
MID004[illegible]	[illegible] INC SITE #2	L	[illegible]	R	[illegible]	T	60	14	N	[illegible]	N						

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                              REQUEST FOR EIM BURDEN                                   19:30 Thursday, October 20, 1988  24
                        PREPARED BY OPPA, REQUEST NUMBER C0053A
                              DATA SOURCE: TSDR SOURCE

                  NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------------ RCRA WASTE CODE=F009 WDESC=A05 ------------------------------------------

                                                    R
                                                    E  K                              A       A       A       A       A
                                                    C  E                              V       V       V       V       V
F            N                                   B  T  Y        Q   U        A        A  A    A  A    A  A    A  A    A
C            A                                   O  Y  L        T   O   T    T        I  T    I  T    I  T    I  T    I
I            M                                   O  P  T        Y   M   R    R        L  R    L  R    L  R    L  R    L
D            E                                   K  E  R        8   8   D    1        1  2    2  3    3  4    4  5    5

AZD009006422 HUGHES AIRCRAFT CO USAF PLANT 44    K 66  C  ~~603007.0  U  10   12       N  13   N  49   N~~
CAD020748125 CASMALIA RESOURCES                  K 61  D      13.0  T  10   12       N  13   N  49   N
CAT000646117 CHEMICAL WASTE MANAGEMENT           K 66  D       0.0  G

------------------------------------------ RCRA WASTE CODE=F009 WDESC=A07 ------------------------------------------

                                                    R
                                                    E  K                              A       A       A       A       A
                                                    C  E                              V       V       V       V       V
F            N                                   B  T  Y        Q   U        A        A  A    A  A    A  A    A  A    A
C            A                                   O  Y  L        T   O   T    T        I  T    I  T    I  T    I  T    I
I            M                                   O  P  T        Y   M   R    R        L  R    L  R    L  R    L  R    L
D            E                                   K  E  R        8   8   D    1        1  2    2  3    3  4    4  5    5

ARD047335922 REMINGTON ARMS CO INC-LONOKE PLANT  K 66  D       0.0  T
OHD066522429 ERIEWAY POLLUTION CONTROL INC.      J 34  D      86.0  T  10   12       N  13   N  49   N
OKD000402396 CHEMICAL RESOURCES INC              N 20  C      21.0  T  10   12       N  13   N  49   N
TND095050019 YALE SECURITY INC                   K 67  A       0.0  G
TXD027147115 MALONE SERVICE CO                   N 20  B      33.0  T  10   12       N  17   N  49   N
TXD091270017 CECOS INTERNATIONAL INC.            N 20  K      82.0  T  10   12       N  13   N  49   N

------------------------------------------ RCRA WASTE CODE=F009 WDESC=AEA ------------------------------------------

                                                    R
                                                    E  K                              A       A       A       A       A
                                                    C  E                              V       V       V       V       V
F            N                                   B  T  Y        Q   U        A        A  A    A  A    A  A    A  A    A
C            A                                   O  Y  L        T   O   T    T        I  T    I  T    I  T    I  T    I
I            M                                   O  P  T        Y   M   R    R        L  R    L  R    L  R    L  R    L
D            E                                   K  E  R        8   8   D    1        1  2    2  3    3  4    4  5    5

NYD080336241 CECOS INTERNATIONAL                 L 31  I      19.0  I  66   14       N  50   N
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                         REQUEST FOR TIM OBRIEN                    19:30 Thursday, October 20, 1988  25
                  PREPARED BY OPRA, REQUEST NUMBER C0063A
                         DATA SOURCE: TSDR SOURCE

               NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------- RCRA WASTE CODE-F009 WDESC=B ------------------------------------

                                      R
                                      E  K                        A     A     A     A     A
                                      C  E                        V     V     V     V     V
F            N                     B  T  Y      Q  U        A     A  A  A  A  A  A  A  A  A
C            A                     O  Y  L      T  O  T     T     I  T  I  T  I  T  I  T  I
I            M                     O  P  T      Y  M  R     R     L  R  L  R  L  R  L  R  L
D            E                     K  E  R      8  8  D     1     1  2  2  3  3  4  4  5  5

IND000806836 GMC ALLISON GAS TRUBINE  K 69  A   0.0 G
VAD003132438 GENICON CORP.            K 69  A   0.0 G
                                   F009:031    4,000.0 G  11  14 N  13N  50N
------------------------------- RCRA WASTE CODE-F009 WDESC=B06 ----------------------------------

                                      R
                                      E  K                        A     A     A     A     A
                                      C  E                        V     V     V     V     V
F            N                     B  T  Y      Q  U        A     A  A  A  A  A  A  A  A  A
C            A                     O  Y  L      T  O  T     T     I  T  I  T  I  T  I  T  I
I            M                     O  P  T      Y  M  R     R     L  R  L  R  L  R  L  R  L
D            E                     K  E  R      8  8  D     1     1  2  2  3  3  4  4  5  5

OKD000402396 CHEMICAL RESOURCES INC   N 24  C  27.0 T  14   17    N

------------------------------- RCRA WASTE CODE-F009 WDESC=B07 ----------------------------------

                                      R
                                      E  K                        A     A     A     A     A
                                      C  E                        V     V     V     V     V
F            N                     B  T  Y      Q  U        A     A  A  A  A  A  A  A  A  A
C            A                     O  Y  L      T  O  T     T     I  T  I  T  I  T  I  T  I
I            M                     O  P  T      Y  M  R     R     L  R  L  R  L  R  L  R  L
D            E                     K  E  R      8  8  D     1     1  2  2  3  3  4  4  5  5

TXD091270017 CECOS INTERNATIONAL INC. N 24  I  41.0 T  10   12    N 13  N 49  N

------------------------------- RCRA WASTE CODE-F009 WDESC=B14 ----------------------------------

                                      R
                                      E  K                        A     A     A     A     A
                                      C  E                        V     V     V     V     V
F            N                     B  T  Y      Q  U        A     A  A  A  A  A  A  A  A  A
C            A                     O  Y  L      T  O  T     T     I  T  I  T  I  T  I  T  I
I            M                     O  P  T      Y  M  R     R     L  R  L  R  L  R  L  R  L
D            E                     K  E  R      8  8  D     1     1  2  2  3  3  4  4  5  5

CTD058865072 TECH SYSTEMS CORP        K 59  A   0.0 G
CTD058865072 TECH SYSTEMS CORP        K 59  B   0.0 G
```

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NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

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---------------------------------- RCRA WASTE CODE-F009 WDESC-B24 ----------------------------------

                                 R                                     A       A       A       A       A
                                 E  K                                  V       V       V       V       V
 F           N                   C  E                                  A  A    A  A    A  A    A  A    A
 C           A                B  T  Y          Q  U        A           I  T    I  T    I  T    I  T    I
 I           M                O  Y  L          T  O  T     T           L  R    L  R    L  R    L  R    L
 D           E                O  P  T          Y  M  R     R           1  2    2  3    3  4    4  5    5
                              K  E  R          B  B  D     1
.CAD000060012  IT  CORP BENICIA   K  59 B   4549.6  G  11   14       N  13   N  50   N

---------------------------------- RCRA WASTE CODE-F009 WDESC-B37 ----------------------------------

                                 R                                     A       A       A       A       A
                                 E  K                                  V       V       V       V       V
 F           N                   C  E                                  A  A    A  A    A  A    A  A    A
 C           A                B  T  Y          Q  U        A           I  T    I  T    I  T    I  T    I
 I           M                O  Y  L          T  O  T     T           L  R    L  R    L  R    L  R    L
 D           E                O  P  T          Y  M  R     R           1  2    2  3    3  4    4  5    5
                              K  E  R          B  B  D     1
ILD010284248  CID LANDFILL    I  36 AS  242010.3  G  66    14       N  50   N

---------------------------------- RCRA WASTE CODE-F009 WDESC-B40 ----------------------------------

                                 R                                     A       A       A       A       A
                                 E  K                                  V       V       V       V       V
 F           N                   C  E                                  A  A    A  A    A  A    A  A    A
 C           A                B  T  Y          Q  U        A           I  T    I  T    I  T    I  T    I
 I           M                O  Y  L          T  O  T     T           L  R    L  R    L  R    L  R    L
 D           E                O  P  T          Y  M  R     R           1  2    2  3    3  4    4  5    5
                              K  E  R          B  B  D     1
                                                     59    51
ILD010284248  CID LANDFILL    I  35 AU  242010.3  G  ~~66    14       N  50   N~~

---------------------------------- RCRA WASTE CODE-F009 WDESC-B41 ----------------------------------

                                 R                                     A       A       A       A       A
                                 E  K                                  V       V       V       V       V
 F           N                   C  E                                  A  A    A  A    A  A    A  A    A
 C           A                B  T  Y          Q  U        A           I  T    I  T    I  T    I  T    I
 I           M                O  Y  L          T  O  T     T           L  R    L  R    L  R    L  R    L
 D           E                O  P  T          Y  M  R     R           1  2    2  3    3  4    4  5    5
                              K  E  R          B  B  D     1
                                                     18    10
ILD010284248  CID LANDFILL    I  35 AU  242010.3  G  ~~66    14       N  50   N~~
```

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                                REQUEST FOR TIN HOLDEN                           19:30 Thursday, October 20, 1988  27
                         PREPARED BY DPRA, REQUEST NUMBER C0063A
                                DATA SOURCE: TSDR SOURCE

                    NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------------- RCRA WASTE CODE=F009 WDESC=B46 ----------------------------------

FCID         NAME                                         BOOK RECTYPE KEYLTR  QTYQ  UOMQ TRD ATR1 AVAIL1 ATR2 AVAIL2 ATR3 AVAIL3 ATR4 AVAIL4 ATR5 AVAIL5

UTD991301740 US POLLUTION CONTROL INC GRASSY MTN FAC     L    36      D       104.0  T    18  19   Y      66   N

---------------------------------- RCRA WASTE CODE=F010 WDESC=A06 ----------------------------------

FCID         NAME                                         BOOK RECTYPE KEYLTR  QTYQ  UOMQ TRD ATR1 AVAIL1 ATR2 AVAIL2 ATR3 AVAIL3 ATR4 AVAIL4 ATR5 AVAIL5

CAT000646117 CHEMICAL WASTE MANAGEMENT                    K    66      E         0.0  @

---------------------------------- RCRA WASTE CODE=F010 WDESC=A06 ----------------------------------

FCID         NAME                                         BOOK RECTYPE KEYLTR  QTYQ  UOMQ TRD ATR1 AVAIL1 ATR2 AVAIL2 ATR3 AVAIL3 ATR4 AVAIL4 ATR5 AVAIL5

OHD045243706 ENVIROSAFE SERVICES OF OHIO, INC.            L    31      H         2.0  T    66  19   N      50   N

---------------------------------- RCRA WASTE CODE=F010 WDESC=A67 ----------------------------------

FCID         NAME                                         BOOK RECTYPE KEYLTR  QTYQ  UOMQ TRD ATR1 AVAIL1 ATR2 AVAIL2 ATR3 AVAIL3 ATR4 AVAIL4 ATR5 AVAIL5

CAD0207481?5 LA MALTA RESOURCES                           I    31      [illegible] 2.0 T  64  19   N
MID000724811 MICHIGAN DISPOSAL INC.                       I    14      H         6.0  T    22  7?   N      12   N      13   N      49   N
OHD0555224?9 ENERGY POLLUTION CONTROL INC.                I    14      I        60.0  T    22  7?   N      12   N      13   N      49   N
OKD065438376 USPCI                                        L    31      H        65.0  T    22  7    N      12   N      13   N      49   N
```

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                  REQUEST FOR TIM HOLDEN                     19:08 Thursday, October 20, 1988  28
         PREPARED BY DPRA, REQUEST NUMBER C0063A
                  DATA SOURCE: TSDR SOURCE

         NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------ RCRA WASTE CODE-F010 WDESC=AEA ------------------------------

                                         R                                      A       A       A       A       A
                                         E  K                                   V       V       V       V       V
F            N                           C  E                                   A       A       A       A       A
C            A                        B  T  Y         Q  U        A             I  A    I  A    I  A    I  A    I
I            M                        O  Y  L         T  O  T     T             L  T    L  T    L  T    L  T    L
D            E                        O  P  T         Y  M  R     R             1  R    2  R    3  R    4  R    5
                                      K  E  R         8  8  D     1                2       3       4       5

LAD000618298  CECOS INTERNATIONAL INC  L  31  H     2.0  T

------------------------------ RCRA WASTE CODE-F010 WDESC=BID ------------------------------

F            N                        BOOK RECTYPE KEYLTR  QTY88 UOM88 TRD ATR1 AVAIL1 ATR2 AVAIL2 ATR3 AVAIL3 ATR4 AVAIL4 ATR5 AVAIL5

MID048090633  WAYNE DISPOSAL INC SITE #2  L  36  B   189.0  T  66  14  N  60  N

------------------------------ RCRA WASTE CODE-F011 WDESC=A06 ------------------------------

F            N                        BOOK RECTYPE KEYLTR  QTY88 UOM88 TRD ATR1 AVAIL1 ATR2 AVAIL2 ATR3 AVAIL3 ATR4 AVAIL4 ATR5 AVAIL5

ILD010284248  CID LANDFILL             L  31  AD  3788.0  G  66  N  N  50  N

------------------------------ RCRA WASTE CODE-F011 WDESC=A07 ------------------------------

F            N                        BOOK RECTYPE KEYLTR  QTY88 UOM88 TRD ATR1 AVAIL1 ATR2 AVAIL2 ATR3 AVAIL3 ATR4 AVAIL4 ATR5 AVAIL5

ILD010[illegible]  CID LANDFILL                       L  31  [illegible]  [illegible].0  G  10  12  N  13  N  4[illegible]  N
OHD0[illegible]  ERIEWAY POLLUTION CONTROL INC.     L  34  F   [illegible].0  T  10  12  N  13  N  4[illegible]  N
OHD087433744  CECOS INTERNATIONAL INC              L  31  H   [illegible].0  T  54  39  N
OKD065438376  USPCI                                L  31  H     7[illegible].0  T  54  39  N
```

NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

RCRA WASTE CODE=F011 WDESC=A11

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
ILD010284248	CID LANDFILL	L	31	AC	3700.0	G	56	67									

RCRA WASTE CODE=F011 WDESC=A12

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
ILD010284248	CID LANDFILL	L	31	AA	3700.0	G	19	10									

RCRA WASTE CODE=F011 WDESC=AEA

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
NYD080336241	CECOS INTERNATIONAL	L	31	J	30.0	T	10	12	N	13	N	49	N				

RCRA WASTE CODE=F011 WDESC=B1D

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY88	UOM88	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
MID048090633	WAYNE DISPOSAL INC SITE #2	L	[illegible]	[illegible]	[illegible]	T	66	14	N	50	N						

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```
                 REQUEST FOR TIM HOLDEN                              19:16 Thursday, October 20, 1988  30
       PREPARED BY DPRA, REQUEST NUMBER C0063A
                 DATA SOURCE: TSDR SOURCE

                          NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------------------- RCRA WASTE CODE-F012 WDESC-A06 ----------------------------------------

                                            R
                                            E  K                       A     A     A     A     A
                                            C  E                       V     V     V     V     V
F             N                          B  T  Y      Q  U        A    A  A  A  A  A  A  A  A  A
C             A                          O  Y  L      T  O  T     T    I  T  I  T  I  T  I  T  I
I             M                          O  P  T      Y  M  R     R    L  R  L  R  L  R  L  R  L
D             E                          K  E  R      0  0  D     1    1  2  2  3  3  4  4  6  6

CAD020748126  CASMALIA RESOURCES         L  31 AA   7.0  T  64    39   N

---------------------------------------- RCRA WASTE CODE-F012 WDESC-A07 ----------------------------------------

                                            R
                                            E  K                       A     A     A     A     A
                                            C  E                       V     V     V     V     V
F             N                          B  T  Y      Q  U        A    A  A  A  A  A  A  A  A  A
C             A                          O  Y  L      T  O  T     T    I  T  I  T  I  T  I  T  I
I             M                          O  P  T      Y  M  R     R    L  R  L  R  L  R  L  R  L
D             E                          K  E  R      0  0  D     1    1  2  2  3  3  4  4  6  6

ILD000805012  PEORIA DISPOSAL CO.        L  31 K  1460.0 G  N     N    N  13 N  50 N
OHD066522429  ERIEWAY POLLUTION CONTROL INC.  J  34 G  19.0  T  N     14   N  13 N  50 N

---------------------------------------- RCRA WASTE CODE-F012 WDESC-A[illegible] ----------------------------------------

                                            R
                                            E  K                       A     A     A     A     A
                                            C  E                       V     V     V     V     V
F             N                          B  T  Y      Q  U        A    A  A  A  A  A  A  A  A  A
C             A                          O  Y  L      T  O  T     T    I  T  I  T  I  T  I  T  I
I             M                          O  P  T      Y  M  R     R    L  R  L  R  L  R  L  R  L
D             E                          K  E  R      0  0  D     1    1  2  2  3  3  4  4  6  6

UTD991301748  US POLLUTION CONTROL INC GRASSY MTN FAC  L  31 O  43.0  T  N  14  N  13 N  50 N

---------------------------------------- RCRA WASTE CODE-F012 WDESC-B10 ----------------------------------------

                                            R
                                            E  K                       A     A     A     A     A
                                            C  E                       V     V     V     V     V
F             N                          B  T  Y      Q  U        A    A  A  A  A  A  A  A  A  A
C             A                          O  Y  L      T  O  T     T    I  T  I  T  I  T  I  T  I
I             M                          O  P  T      Y  M  R     R    L  R  L  R  L  R  L  R  L
D             E                          K  E  R      0  0  D     1    1  2  2  3  3  4  4  5  6

MID048090633  WAYNE DISPOSAL INC SITE #2  L  [illegible] H  169.0  T  66  14   N  50 N
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                                  REQUEST FOR TIM HOLDEN                                  19:38 Thursday, October 20, 1988  31
                          PREPARED BY OPRA, REQUEST NUMBER C0053A
                                DATA SOURCE: TSDR SOURCE

                    NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------ RCRA WASTE CODE=F019 WDESC=A06 ------------------------------------

                                                    R
                                                    E   K                          A       A       A       A       A
                                                    C   E                          V       V       V       V       V
F             N                                 B   T   Y        Q   U      A      A   A   A   A   A   A   A   A   A
C             A                                 O   Y   L        T   O   T  T      I   T   I   T   I   T   I   T   I
I             M                                 O   P   T        Y   M   R  R      L   R   L   R   L   R   L   R   L
D             E                                 K   E   R        0   0   D  1      1   2   2   3   3   4   4   5   5

ILD010284240  CID LANDFILL                      L  31   AF   4242.0  G  56  19     N
PAD003025410  BOWEN-MCLAUGHLIN-YORK-CO.         K  66   A       0.0  T

------------------------------------ RCRA WASTE CODE=F019 WDESC=A07 ------------------------------------

                                                    R
                                                    E   K                          A       A       A       A       A
                                                    C   E                          V       V       V       V       V
F             N                                 B   T   Y        Q   U      A      A   A   A   A   A   A   A   A   A
C             A                                 O   Y   L        T   O   T  T      I   T   I   T   I   T   I   T   I
I             M                                 O   P   T        Y   M   R  R      L   R   L   R   L   R   L   R   L
D             E                                 K   E   R        0   0   D  1      1   2   2   3   3   4   4   5   5
                                                                                   N  13   N  50   N
CAD020748126  CASMALIA RESOURCES                L  31   AB      1.0  T  [illegible] [illegible]
ILD000805812  PEORIA DISPOSAL CO.               L  31   L    1010.0  G  [illegible] [illegible]
ILD000805812  PEORIA DISPOSAL CO.               L  31   M    4202.0  G  [illegible] [illegible]
ILD010284240  CID LANDFILL                      L  31   AD   4242.0  G  [illegible] [illegible]
NVT330010000  US ECOLOGY CHEM SITE INC          L  31   E      26.0  T  [illegible] [illegible]
OHD045243706  ENVIROSAFE SERVICES OF OHIO, INC. L  31   I     600.0  T  [illegible] [illegible]
OHD055522429  ERIEWAY POLLUTION CONTROL INC.    J  34   H      17.0  T  [illegible] [illegible]
OHD087433744  CECOS INTERNATIONAL INC           L  31   I     309.0  T  [illegible] [illegible]
OKD065438376  USPCI                             L  31   J     676.0  T  [illegible] [illegible]
PA6213820503  USARMY LETTERKENNY ARMY DEPOT     K  67   B       0.0  G
PAD002395887  NEW JERSEY ZINC CO                J  40   B  ~~[illegible] T~~
PAD059087072  MILL SERVICE INC.                 K  61   C  ~~[illegible] T~~
PAD085690592  WASTE CONVERSION INC.             J  34   H    6682.0  T  N56 14 56   N
PAD085690592  WASTE CONVERSION INC.             J  40   H  ~~[illegible] T~~
TXD069452340  TEXAS ECOLOGISTS INC.             L  31   E       0.0  T  N56 14 56   N

------------------------------------ RCRA WASTE CODE=F019 WDESC=A11 ------------------------------------

                                                    R
                                                    E   K                          A       A       A       A       A
                                                    C   E                          V       V       V       V       V
F             N                                 B   T   Y        Q   U      A      A   A   A   A   A   A   A   A   A
C             A                                 O   Y   L        T   O   T  T      I   T   I   T   I   T   I   T   I
I             M                                 O   P   T        Y   M   R  R      L   R   L   R   L   R   L   R   L
D             E                                 K   E   R        0   0   D  1      1   2   2   3   3   4   4   5   5

ILD010284240  CID LANDFILL                      L  31   AG   4242.0  G  56  51     N
LAD000618298  CECOS INTERNATIONAL INC           L  31   I     143.0  T  56  51     N
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                                    REQUEST FOR TIM HOLDER                         19:36 Thursday, October 20, 1988  32
                              PREPARED BY OPRA, REQUEST NUMBER C0053A
                                    DATA SOURCE: TSDR SOURCE

                          NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

 ---------------------------------------- RCRA WASTE CODE-F019 WDESC-A12 ----------------------------------------

                                            R
                                            E  K                                A       A       A       A       A
 F           N                              C  E                                V       V       V       V       V
 C           A                           B  T  Y          Q  U        A         A  A    A  A    A  A    A  A    A
 I           M                           O  Y  L          T  O  T     T         I  T    I  T    I  T    I  T    I
 D           E                           O  P  T          Y  M  R     R         L  R    L  R    L  R    L  R    L
                                         K  E  R          0  0  D     1         1  2    2  3    3  4    4  5    5

 ILD010284248  CID LANDFILL              L  31 AE    4242.0  0  10    10        N
 TXD027147115  MALONE SERVICE CO         M  20 F        6.0  T  18    10

 ---------------------------------------- RCRA WASTE CODE-F019 WDESC-AAB ----------------------------------------

                                            R
                                            E  K                                A       A       A       A       A
 F           N                              C  E                                V       V       V       V       V
 C           A                           B  T  Y          Q  U        A         A  A    A  A    A  A    A  A    A
 I           M                           O  Y  L          T  O  T     T         I  T    I  T    I  T    I  T    I
 D           E                           O  P  T          Y  M  R     R         L  R    L  R    L  R    L  R    L
                                         K  E  R          0  0  D     1         1  2    2  3    3  4    4  5    5

 NYD080336241  CECOS INTERNATIONAL       L  31 K     7414.0  T  18    10        N

 ---------------------------------------- RCRA WASTE CODE-F019 WDESC-B14 ----------------------------------------

                                            R
                                            E  K                                A       A       A       A       A
 F           N                              C  E                                V       V       V       V       V
 C           A                           B  T  Y          Q  U        A         A  A    A  A    A  A    A  A    A
 I           M                           O  Y  L          T  O  T     T         I  T    I  T    I  T    I  T    I
 D           E                           O  P  T          Y  M  R     R         L  R    L  R    L  R    L  R    L
                                         K  E  R          0  0  D     1         1  2    2  3    3  4    4  5    5

 CTD050866072  TECH SYSTEMS CORP         K  69 B        0.0  G

 ---------------------------------------- RCRA WASTE CODE-F019 WDESC-B22 ----------------------------------------

                                            R
                                            E  K                                A       A       A       A       A
 F           N                              C  E                                V       V       V       V       V
 C           A                           B  T  Y          Q  U        A         A  A    A  A    A  A    A  A    A
 I           M                           O  Y  L          T  O  T     T         I  T    I  T    I  T    I  T    I
 D           E                           O  P  T          Y  M  R     R         L  R    L  R    L  R    L  R    L
                                         K  E  R          0  0  D     1         1  2    2  3    3  4    4  5    5

 OKD041501337  MCDONNELL DOUGLAS  TULSA  E  71 A   [illegible]  T  1[illegible]    10        N
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                              REQUEST FOR TIM HOLDER                      19:33 Thursday, October 20, 1988  31
                     PREPARED BY DPRA, REQUEST NUMBER LOUSJA
                            DATA SOURCE: TSDR SOURCE

                   NON-CDI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------------- RCRA WASTE CODE-F019 WDESC-036 ------------------------------------------

                                      R
                                      E  K                              A         A         A         A         A
                                      C  E                              V         V         V         V         V
F             N                    B  T  Y          Q  U        A       A  A      A  A      A  A      A  A      A
C             A                    O  Y  L          T  O  T     T       I  T      I  T      I  T      I  T      I
I             M                    O  P  T          Y  M  R     R       L  R      L  R      L  R      L  R      L
D             E                    K  E  R          8  8  D     1       1  2      2  3      3  4      4  5      5
                                                          64    14      N  SD     N
ILD010284240  CID LANDFILL         L  36 BA   62116.0  0  10    10      X

---------------------------------- RCRA WASTE CODE-F019 WDESC-040 ------------------------------------------

                                      R
                                      E  K                              A         A         A         A         A
                                      C  E                              V         V         V         V         V
F             N                    B  T  Y          Q  U        A       A  A      A  A      A  A      A  A      A
C             A                    O  Y  L          T  O  T     T       I  T      I  T      I  T      I  T      I
I             M                    O  P  T          Y  M  R     R       L  R      L  R      L  R      L  R      L
D             E                    K  E  R          8  8  D     1       1  2      2  3      3  4      4  5      5

ILD010284240  CID LANDFILL         L  36 AZ   62116.0  0  66    51      N

---------------------------------- RCRA WASTE CODE-F019 WDESC-041 ------------------------------------------

                                      R
                                      E  K                              A         A         A         A         A
                                      C  E                              V         V         V         V         V
F             N                    B  T  Y          Q  U        A       A  A      A  A      A  A      A  A      A
C             A                    O  Y  L          T  O  T     T       I  T      I  T      I  T      I  T      I
I             M                    O  P  T          Y  M  R     R       L  R      L  R      L  R      L  R      L
D             E                    K  E  R          8  8  D     1       1  2      2  3      3  4      4  5      5
                                                                        N
ILD000805812  PEORIA DISPOSAL CO.  L  36 AE     110.0  6  10    10      X
ILD010284240  CID LANDFILL         L  36 AY   62116.0  0  10    10      X

---------------------------------- RCRA WASTE CODE-F024 WDESC-A05 ------------------------------------------

                                      R
                                      E  K                              A         A         A         A         A
                                      C  E                              V         V         V         V         V
F             N                    B  T  Y          Q  U        A       A  A      A  A      A  A      A  A      A
C             A                    O  Y  L          T  O  T     T       I  T      I  T      I  T      I  T      I
I             M                    O  P  T          Y  M  R     R       L  R      L  R      L  R      L  R      L
D             E                    K  E  R          8  8  D     1       1  2      2  3      3  4      4  5      5

CAD020748125  CASMALIA RESOURCES   K  61 I       39.0  1  5     5       N  23     N  22     N
```

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                                 REQUEST FOR TIM HOLDEN                          19:38 Thursday, October 20, 1988  34
                        PREPARED BY OPRA, REQUEST NUMBER C0653A
                               DATA SOURCE: TSDR SOURCE

                     NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------ RCRA WASTE CODE=F024 WDESC=A07 ------------------------------------

                                                     R
                                                     E   K                     A      A      A      A      A
                                                     C   E                     V      V      V      V      V
F             N                                   B  T   Y       Q  U      A   A  A   A  A   A  A   A  A   A
C             A                                   O  Y   L       T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                                   O  P   T       Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                                   K  E   R       8  8  D   1   1  2   2  3   3  4   4  5   5

LAD008086506  PPG INDUSTRIES INC                  K  56  A   192.0  T  39  .1A N  2A  N

------------------------------------ RCRA WASTE CODE=F024 WDESC=A10 ------------------------------------

                                                     R
                                                     E   K                     A      A      A      A      A
                                                     C   E                     V      V      V      V      V
F             N                                   B  T   Y       Q  U      A   A  A   A  A   A  A   A  A   A
C             A                                   O  Y   L       T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                                   O  P   T       Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                                   K  E   R       8  8  D   1   1  2   2  3   3  4   4  5   5

TXD008092793  DOW CHEMICAL CO                     L  31  C    52.0  T  56  61  K

------------------------------------ RCRA WASTE CODE=F024 WDESC=AEA ------------------------------------

                                                     R
                                                     E   K                     A      A      A      A      A
                                                     C   E                     V      V      V      V      V
F             N                                   B  T   Y       Q  U      A   A  A   A  A   A  A   A  A   A
C             A                                   O  Y   L       T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                                   O  P   T       Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                                   K  E   R       8  8  D   1   1  2   2  3   3  4   4  5   5

LAD000618256  CECOS INTERNATIONAL INC             L  31  J    70.0  T  2   1   N  2   N

------------------------------------ RCRA WASTE CODE=K002 WDESC=A07 ------------------------------------

                                                     R
                                                     E   K                     A      A      A      A      A
                                                     C   E                     V      V      V      V      V
F             N                                   B  T   Y       Q  U      A   A  A   A  A   A  A   A  A   A
C             A                                   O  Y   L       T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                                   O  P   T       Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                                   K  E   R       8  8  D   1   1  2   2  3   3  4   4  5   5

TXD055141378  ROLLINS ENVIRONMENTAL SERVICES      L  31  A   143.0  T  10  10  N
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                                            REQUEST FOR TIM HOLDEN                 19.38 Thursday, October 20, 1988  36
                                       PREPARED BY DPRA, REQUEST NUMBER C0053A
                                            DATA SOURCE: ISDR SOURCE

                             NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------------------------- RCRA WASTE CODE=K002 WDESC=B03 ----------------------------------------------

                                                              R
                                                              E  K                               A       A       A       A       A
                                                              C  E                               V       V       V       V       V
F            N                                             B  T  Y            Q  U      A        A  A    A  A    A  A    A  A    A
C            A                                             O  Y  L            T  O  T   T        I  T    I  T    I  T    I  T    I
I            M                                             O  P  T            Y  M  R   R        L  R    L  R    L  R    L  R    L
D            E                                             K  E  R            0  0  D   1        1  2    2  3    3  4    4  5    5

                                                                           0
TXD027147116  MALONE SERVICE CO                            N  24 I      ~~1009.0~~ T

---------------------------------------------- RCRA WASTE CODE=K002 WDESC=B16 ----------------------------------------------

                                                              R
                                                              E  K                               A       A       A       A       A
                                                              C  E                               V       V       V       V       V
F            N                                             B  T  Y            Q  U      A        A  A    A  A    A  A    A  A    A
C            A                                             O  Y  L            T  O  T   T        I  T    I  T    I  T    I  T    I
I            M                                             O  P  T            Y  M  R   R        L  R    L  R    L  R    L  R    L
D            E                                             K  E  R            0  0  D   1        1  2    2  3    3  4    4  5    5

                                                                          10
NYD000810419  CIBA-GEIGY CORP                              K  71 A    ~~693208.0~~ G

---------------------------------------------- RCRA WASTE CODE=K002 WDESC=B20 ----------------------------------------------

                                                              R
                                                              E  K                               A       A       A       A       A
                                                              C  E                               V       V       V       V       V
F            N                                             B  T  Y            Q  U      A        A  A    A  A    A  A    A  A    A
C            A                                             O  Y  L            T  O  T   T        I  T    I  T    I  T    I  T    I
I            M                                             O  P  T            Y  M  R   R        L  R    L  R    L  R    L  R    L
D            E                                             K  E  R            0  0  D   1        1  2    2  3    3  4    4  5    5

NYD000810419  CIBA-GEIGY CORP                              L  36 A        1336.0  T  10  10      N

---------------------------------------------- RCRA WASTE CODE=K002 WDESC=B62 ----------------------------------------------

                                                              R
                                                              E  K                               A       A       A       A       A
                                                              C  E                               V       V       V       V       V
F            N                                             B  T  Y            Q  U      A        A  A    A  A    A  A    A  A    A
C            A                                             O  Y  L            T  O  T   T        I  T    I  T    I  T    I  T    I
I            M                                             O  P  T            Y  M  R   R        L  R    L  R    L  R    L  R    L
D            E                                             K  E  R            0  0  D   1        1  2    2  3    3  4    4  5    5

OHD087433744  CECOS INTERNATIONAL INC                      L  36 AM         94.5  T  15  10      N
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                    REQUEST FOR TIM HOLDEN                       19:30 Thursday, October 20, 1988  36
              PREPARED BY OPRA, REQUEST NUMBER C0053A
                   DATA SOURCE: FSDR SOURCE

          NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------- RCRA WASTE CODE-K003 WDESC-A07 -----------------------------

                                       R
                                       E   K                          A        A        A        A        A
                                       C   E                          V        V        V        V        V
F            N                      B  T   Y      Q  U     A          A  A     A  A     A  A     A  A     A
C            A                      O  Y   L      T  O  T  T          I  T     I  T     I  T     I  T     I
I            M                      O  P   T      Y  M  R  R          L  R     L  R     L  R     L  R     L
D            E                      K  E   R      B  B  D  1          1  2     2  3     3  4     4  5     5

TXD055141378 ROLLINS ENVIRONMENTAL SERVICES   L 31 B   343.0 T 10 .10 N

------------------------- RCRA WASTE CODE-K003 WDESC-016 -----------------------------

                                       R
                                       E   K                          A        A        A        A        A
                                       C   E                          V        V        V        V        V
F            N                      B  T   Y      Q  U     A          A  A     A  A     A  A     A  A     A
C            A                      O  Y   L      T  O  T  T          I  T     I  T     I  T     I  T     I
I            M                      O  P   T      Y  M  R  R          L  R     L  R     L  R     L  R     L
D            E                      K  E   R      B  B  D  1          1  2     2  3     3  4     4  5     5

NYD000018419 CIBA-GEIGY CORP                  K 71 A ~~[illegible]~~ 0

------------------------- RCRA WASTE CODE-K003 WDESC-020 -----------------------------

                                       R
                                       E   K                          A        A        A        A        A
                                       C   E                          V        V        V        V        V
F            N                      B  T   Y      Q  U     A          A  A     A  A     A  A     A  A     A
C            A                      O  Y   L      T  O  T  T          I  T     I  T     I  T     I  T     I
I            M                      O  P   T      Y  M  R  R          L  R     L  R     L  R     L  R     L
D            E                      K  E   R      B  B  D  1          1  2     2  3     3  4     4  5     5

NYD000018419 CIBA-GEIGY CORP                  L 36 A  1336.0 T 10 10  N

------------------------- RCRA WASTE CODE-K003 WDESC-062 -----------------------------

                                       R
                                       E   K                          A        A        A        A        A
                                       C   E                          V        V        V        V        V
F            N                      B  T   Y      Q  U     A          A  A     A  A     A  A     A  A     A
C            A                      O  Y   L      T  O  T  T          I  T     I  T     I  T     I  T     I
I            M                      O  P   T      Y  M  R  R          L  R     L  R     L  R     L  R     L
D            E                      K  E   R      B  B  D  1          1  2     2  3     3  4     4  5     5

OHD0[illegible]433[illegible]44 [illegible] INTERNATIONAL INC   L [illegible] AM    94.5 T 15 10  N
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                         REQUEST FOR TIM HOLDEN                         19:38 Thursday, October 20, 1988  37
                  PREPARED BY DPRA, REQUEST NUMBER C0063A
                         DATA SOURCE: TSDR SOURCE

              NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

----------------------------------- RCRA WASTE CODE-K005 WDESC-A07 -------------------------------------

                                                     R
                                                     E  K                     A     A     A     A     A
                                                     C  E                     V     V     V     V     V
F             N                                   B  T  Y       Q  U      A   A A   A A   A A   A A   A
C             A                                   O  Y  L       T  O  T   T   I T   I T   I T   I T   I
I             M                                   O  P  T       Y  M  R   R   L R   L R   L R   L R   L
D             E                                   K  E  R       B  B  D   1   1 2   2 3   3 4   4 5   6

TXD055141370  ROLLINS ENVIRONMENTAL SERVICES      L 31  D   343.0  T 10 . 10   N

----------------------------------- RCRA WASTE CODE-K005 WDESC-B16 -------------------------------------

                                                     R
                                                     E  K                     A     A     A     A     A
                                                     C  E                     V     V     V     V     V
F             N                                   B  T  Y       Q  U      A   A A   A A   A A   A A   A
C             A                                   O  Y  L       T  O  T   T   I T   I T   I T   I T   I
I             M                                   O  P  T       Y  M  R   R   L R   L R   L R   L R   L
D             E                                   K  E  R       B  B  D   1   1 2   2 3   3 4   4 5   6
                                                                0
NYD000018419  CIBA-GEIGY CORP                     K 71  A   [illegible] 0

----------------------------------- RCRA WASTE CODE-K006 WDESC-B20 -------------------------------------

                                                     R
                                                     E  K                     A     A     A     A     A
                                                     C  E                     V     V     V     V     V
F             N                                   B  T  Y       Q  U      A   A A   A A   A A   A A   A
C             A                                   O  Y  L       T  O  T   T   I T   I T   I T   I T   I
I             M                                   O  P  T       Y  M  R   R   L R   L R   L R   L R   L
D             E                                   K  E  R       B  B  D   1   1 2   2 3   3 4   4 5   6

NYD000018419  CIBA-GEIGY CORP                     L 36  A  1336.0  T 10   10   N

----------------------------------- RCRA WASTE CODE-K006 WDESC-A07 -------------------------------------

                                                     R
                                                     E  K                     A     A     A     A     A
                                                     C  E                     V     V     V     V     V
F             N                                   B  T  Y       Q  U      A   A A   A A   A A   A A   A
C             A                                   O  Y  L       T  O  T   T   I T   I T   I T   I T   I
I             M                                   O  P  T       Y  M  R   R   L R   L R   L R   L R   L
D             E                                   K  E  R       B  B  D   1   1 2   2 3   3 4   4 5   6

PAD085690592  WASTE CONVERSION INC.               J 14  I    40.0  T 10   10   N
PAD085690592  WASTE CONVERSION INC.               J 40  I    61.0  T
TXD055141378  ROLLINS ENVIRONMENTAL SERVICES      L 31  I   141.0  T 10   10   N
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                                   REQUEST FOR TIM HOLDEN                        19:30 Thursday, October 20, 1988  38
                          PREPARED BY OPRA, REQUEST NUMBER C00b3A
                                  DATA SOURCE: TSDR SOURCE

                      NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------------------- RCRA WASTE CODE-K006 WDESC-B16 ----------------------------------------

                                         R
                                         E  K                                A        A        A        A        A
                                         C  E                                V        V        V        V        V
F              N                      B  T  Y          Q  U        A        A  A     A  A     A  A     A  A     A
C              A                      O  Y  L          T  O  T     T        I  T     I  T     I  T     I  T     I
I              M                      O  P  T          Y  M  R     R        L  R     L  R     L  R     L  R     L
D              E                      K  E  R          8  8  D     1        1  2     2  3     3  4     4  5     5

                                                     0
NYD000018419   CIBA-GEIGY CORP        K  71 A      [illegible] 0

---------------------------------------- RCRA WASTE CODE-K006 WDESC-B20 ----------------------------------------

                                         R
                                         E  K                                A        A        A        A        A
                                         C  E                                V        V        V        V        V
F              N                      B  T  Y          Q  U        A        A  A     A  A     A  A     A  A     A
C              A                      O  Y  L          T  O  T     T        I  T     I  T     I  T     I  T     I
I              M                      O  P  T          Y  M  R     R        L  R     L  R     L  R     L  R     L
D              E                      K  E  R          8  8  D     1        1  2     2  3     3  4     4  5     5

NYD000018419   CIBA-GEIGY CORP        L  35 A     1336.0  T  10    10       N

---------------------------------------- RCRA WASTE CODE-K007 WDESC-A07 ----------------------------------------

                                         R
                                         E  K                                A        A        A        A        A
                                         C  E                                V        V        V        V        V
F              N                      B  T  Y          Q  U        A        A  A     A  A     A  A     A  A     A
C              A                      O  Y  L          T  O  T     T        I  T     I  T     I  T     I  T     I
I              M                      O  P  T          Y  M  R     R        L  R     L  R     L  R     L  R     L
D              E                      K  E  R          8  8  D     1        1  2     2  3     3  4     4  5     5

TXD055141378   ROLLINS ENVIRONMENTAL SERVICES   L  31 F      343.0  T  10    10       N

---------------------------------------- RCRA WASTE CODE-K007 WDESC-B16 ----------------------------------------

                                         R
                                         E  K                                A        A        A        A        A
                                         C  E                                V        V        V        V        V
F              N                      B  T  Y          Q  U        A        A  A     A  A     A  A     A  A     A
C              A                      O  Y  L          T  O  T     T        I  T     I  T     I  T     I  T     I
I              M                      O  P  T          Y  M  R     R        L  R     L  R     L  R     L  R     L
D              E                      K  E  R          8  8  D     1        1  2     2  3     3  4     4  5     5

                                                     0
NYD000018419   CIBA-GEIGY CORP        K  71 A      [illegible] G
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                    REQUEST FOR TIM HOLDEN                         19:30 Thursday, October 20, 1988  39
              PREPARED BY OPRA, REQUEST NUMBER C0863A
                    DATA SOURCE: TSDR SOURCE

            NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------- RCRA WASTE CODE-K007 WDESC-B20 -------------------------------

                                                     R
                                                     E  K                       A      A      A      A      A
                                                     C  E                       V      V      V      V      V
F              N                                  B  T  Y         Q  U      A   A  A   A  A   A  A   A  A   A
C              A                                  O  Y  L         T  O  T   T   I  T   I  T   I  T   I  T   I
I              M                                  O  P  T         Y  M  R   R   L  R   L  R   L  R   L  R   L
D              E                                  K  E  R         8  8  D   1   1  2   2  3   3  4   4  5   5

NYD000818419   CIBA-GEIGY CORP                    L 36  A    1336.0  T 10 . 10   N

------------------------------- RCRA WASTE CODE-K011 WDESC-A05 -------------------------------

                                                     R
                                                     E  K                       A      A      A      A      A
                                                     C  E                       V      V      V      V      V
F              N                                  B  T  Y         Q  U      A   A  A   A  A   A  A   A  A   A
C              A                                  O  Y  L         T  O  T   T   I  T   I  T   I  T   I  T   I
I              M                                  O  P  T         Y  M  R   R   L  R   L  R   L  R   L  R   L
D              E                                  K  E  R         8  8  D   1   1  2   2  3   3  4   4  5   5

LAD008176390   AMERICAN CYANAMID CO               N 20  A  459381.0  T 49   6   N  21  N  22  N

------------------------------- RCRA WASTE CODE-K011 WDESC-A07 -------------------------------

                                                     R
                                                     E  K                       A      A      A      A      A
                                                     C  E                       V      V      V      V      V
F              N                                  B  T  Y         Q  U      A   A  A   A  A   A  A   A  A   A
C              A                                  O  Y  L         T  O  T   T   I  T   I  T   I  T   I  T   I
I              M                                  O  P  T         Y  M  R   R   L  R   L  R   L  R   L  R   L
D              E                                  K  E  R         8  8  D   1   1  2   2  3   3  4   4  5   5

LAD008175390   AMERICAN CYANAMID CO               K 65  A       0.0  T
LAD008175390   AMERICAN CYANAMID CO               K 61  B     208.0  T 36   10  N  28  N  5   N  21  N  22  N
```

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                          REQUEST FOR TIM HOLDEN                         19:30 Thursday, October 20, 1988  40
                    PREPARED BY OPRA, REQUEST NUMBER C0053A
                          DATA SOURCE: TSDR SOURCE

             NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------ RCRA WASTE CODE-K011 WDESC-B02 ------------------------------------------

                                                   R
                                                   E  K                                 A       A       A       A       A
 F             N                                   C  E                                 V       V       V       V       V
 C             A                                B  T  Y          Q  U        A          A  A    A  A    A  A    A  A    A
 I             M                                O  Y  L          T  O  T     T          I  T    I  T    I  T    I  T    I
 D             E                                O  P  T          Y  M  R     R          L  R    L  R    L  R    L  R    L
                                                K  E  R          8  8  D     1          1  2    2  3    3  4    4  5    5

OHD042157644  STANDARD OIL CHEMICAL CO          K  69 A        0.0  T
OHD042157644  STANDARD OIL CHEMICAL CO          K  71 A        0.0  T
OHD042157644  STANDARD OIL CHEMICAL CO          K  71 B        0.0  T
OHD042157644  STANDARD OIL CHEMICAL CO          M  24 A   311067.3  T  49    6          N  21   N  22   N  67   Y
TXD001700806  MONSANTO CO                       K  69 A        0.0
TXD001700806  MONSANTO CO                       M  24 A      110.0  R  49    6          N  21   N  22   N
TXD001700806  MONSANTO CO                       M  24 B       10.0  M  40    6          N  21   N  22   N
TXD000081101  DUPONT EI DE NEMOURS & CO INC BEAU K 69 A       66.7  T  60       1A      N    2A N     21 N     22 N
TXD000081101  DUPONT EI DE NEMOURS & CO INC BEAU M 24 A ~~312333.2~~ T 49   6          Y  21   N  22   N
                                                           215,233

------------------------------------ RCRA WASTE CODE-K011 WDESC-D36 ------------------------------------------

                                                   R
                                                   E  K                                 A       A       A       A       A
 F             N                                   C  E                                 V       V       V       V       V
 C             A                                B  T  Y          Q  U        A          A  A    A  A    A  A    A  A    A
 I             M                                O  Y  L          T  O  T     T          I  T    I  T    I  T    I  T    I
 D             E                                O  P  T          Y  M  R     R          L  R    L  R    L  R    L  R    L
                                                K  E  R          8  8  D     1          1  2    2  3    3  4    4  5    5

TXD001700806  MONSANTO CO                       L  35 B        0.5  T  1     1          N

------------------------------------ RCRA WASTE CODE-K011 WDESC-B64 ------------------------------------------

                                                   R
                                                   E  K                                 A       A       A       A       A
 F             N                                   C  E                                 V       V       V       V       V
 C             A                                B  T  Y          Q  U        A          A  A    A  A    A  A    A  A    A
 I             M                                O  Y  L          T  O  T     T          I  T    I  T    I  T    I  T    I
 D             E                                O  P  T          Y  M  R     R          L  R    L  R    L  R    L  R    L
                                                K  E  R          8  8  D     1          1  2    2  3    3  4    4  5    5
                                                                       3     18            29
TXD000751172  STANDARD OIL CHEMICAL CO          M  24 A       56.3  M  ~~36~~ ~~8~~     N  ~~21~~  N  ~~22  N  16  Y~~
```

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                             REQUEST FOR TIM HOLDEN                        19:30 Thursday, October 20, 1988  41
                    PREPARED BY OPRA, REQUEST NUMBER C0053A
                           DATA SOURCE: TSOR SOURCE

                 NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

--------------------------------- RCRA WASTE CODE-K011 WDESC-B69 ---------------------------------

                                                    R
                                                    E   K                         A       A       A       A       A
                                                    C   E                         V       V       V       V       V
F            N                                  B   T   Y       Q  U      A      A   A   A   A   A   A   A   A   A
C            A                                  O   Y   L       T  O  T   T      I   T   I   T   I   T   I   T   I
I            M                                  O   P   T       Y  M  R   R      L   R   L   R   L   R   L   R   L
D            E                                  K   E   R       0  0  D   1      1   2   2   3   3   4   4   6   6

                                                            88,876,680#
TXD008079627  STERLING CHEMICALS INC            N  24   A     ~~99.0~~ N  36  10     Y  20   Y  ~~0   N  05   N  22  N~~

--------------------------------- RCRA WASTE CODE-K011 WDESC-B90 ---------------------------------

                                                    R
                                                    E   K                         A       A       A       A       A
                                                    C   E                         V       V       V       V       V
F            N                                  B   T   Y       Q  U      A      A   A   A   A   A   A   A   A   A
C            A                                  O   Y   L       T  O  T   T      I   T   I   T   I   T   I   T   I
I            M                                  O   P   T       Y  M  R   R      L   R   L   R   L   R   L   R   L
D            E                                  K   E   R       0  0  D   1      1   2   2   3   3   4   4   6   6

OHD087433744  CECOS INTERNATIONAL INC           L  36   BI     2.6  T 20   7     N

--------------------------------- RCRA WASTE CODE-K011 WDESC-BID ---------------------------------

                                                    R
                                                    E   K                         A       A       A       A       A
                                                    C   E                         V       V       V       V       V
F            N                                  B   T   Y       Q  U      A      A   A   A   A   A   A   A   A   A
C            A                                  O   Y   L       T  O  T   T      I   T   I   T   I   T   I   T   I
I            M                                  O   P   T       Y  M  R   R      L   R   L   R   L   R   L   R   L
D            E                                  K   E   R       0  0  D   1      1   2   2   3   3   4   4   6   6

TXD000751172  STANDARD OIL CHEMICAL CO          L  36   A    364.7  T  2   1     N   2   N

--------------------------------- RCRA WASTE CODE-K013 WDESC-A06 ---------------------------------

                                                    R
                                                    E   K                         A       A       A       A       A
                                                    C   E                         V       V       V       V       V
F            N                                  B   T   Y       Q  U      A      A   A   A   A   A   A   A   A   A
C            A                                  O   Y   L       T  O  T   T      I   T   I   T   I   T   I   T   I
I            M                                  O   P   T       Y  M  R   R      L   R   L   R   L   R   L   R   L
D            E                                  K   E   R       0  0  D   1      1   2   2   3   3   4   4   5   6

LAD008175390  AMERICAN CYANAMID CO              N  20   H   2.0000.0 T  1 49   5     N  21   N  22   N
```

C-30

REQUEST FOR TIM HOLDEN
PREPARED BY OPRA, REQUEST NUMBER C0053A
DATA SOURCE: TSDR SOURCE

NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

RCRA WASTE CODE-K013 WDESC-AEA

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY8	UOM8	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
LAD000618298	CECOS INTERNATIONAL INC	L	31	L	0.0	T	~~56~~ 39	~~3A~~ 1A	N	~~56~~ 2A	N						

RCRA WASTE CODE-K013 WDESC-002

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY8	UOM8	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
OHD042157644	STANDARD OIL CHEMICAL CO	K	69	A	0.0	T											
OHD042157644	STANDARD OIL CHEMICAL CO	K	71	A	0.0	T											
OHD042157644	STANDARD OIL CHEMICAL CO	K	71	B	0.0	T											
OHD042157644	STANDARD OIL CHEMICAL CO	N	24	A	311067.3	T	49	6	N	21	N	22	N	67	Y		
TXD001700806	MONSANTO CO	K	69	A	0.0												
TXD001700806	MONSANTO CO	N	24	A	110.0	H	49	6	N	21	N	22	N				
TXD001700806	MONSANTO CO	N	24	B	10.0	H	49	6	N	21	N	22	N				
TXD008081101	DUPONT EI DE NEMOURS & CO INC BEAU	K	69	A	66.7	T	68	1A	N	2A	N	21	N	22	N		
TXD008081101	DUPONT EI DE NEMOURS & CO INC BEAU	N	24	A	~~[illegible]~~ 215,233	T	49	6	Y	21	N	22	N				

RCRA WASTE CODE-K013 WDESC-B36

FCID	NAML	BOOK	RECTYPE	KEYLTR	QTY8	UOM8	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
TXD001700806	MONSANTO CO	L	35	B	0.5	T	1	1	N								

REQUEST FOR TIM HOLDEN
PREPARED BY DPRA, REQUEST NUMBER C0863A
DATA SOURCE: TSDR SOURCE

19:30 Thursday, October 20, 1988 43

NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

RCRA WASTE CODE-K013 WDESC-B64

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY8	UOM8	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR6	AVAIL6
TXD008761172	STANDARD OIL CHEMICAL CO	N	24	A	66.3	N	~~36~~ 3	~~8~~ 18	N	~~21~~ 20	N	~~23~~	~~N~~	~~16~~	~~Y~~		

RCRA WASTE CODE-K013 WDESC-B69

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY8	UOM8	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR6	AVAIL6
TXD008079527	STERLING CHEMICALS INC	N	24	A	88,876,670 G ~~90.0~~	~~N~~	36	18	Y	20	Y	6	N	21	N	22	N

RCRA WASTE CODE-K013 WDESC-BID

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY8	UOM8	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR6	AVAIL6
TXD008751172	STANDARD OIL CHEMICAL CO	L	35	A	364.7	T	2	1	N	2	N						

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                 REQUEST FOR FIM HOLDER                     19:03 Thursday, October 20, 1988  44
           PREPARED BY OPRA, REQUEST NUMBER C0053A
                 DATA SOURCE: TSDR SOURCE

        NON-CDI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------ RCRA WASTE CODE=K014 WDESC=B02 ------------------------------------

                                                          R
                                                          E   K                    A     A     A     A     A
                                                          C   E                    V     V     V     V     V
F             N                                         B T   Y         Q U     A  A A   A A   A A   A A   A
C             A                                         O Y   L         T O T   T  I T   I T   I T   I T   I
I             M                                         O P   T         Y M R   R  L R   L R   L R   L R   L
D             E                                         K E   R         8 8 D   1  1 2   2 3   3 4   4 5   5

OHD042157644  STANDARD OIL CHEMICAL CO                  K 69  A       0.0 T
OHD042157644  STANDARD OIL CHEMICAL CO                  K 71  A       0.0 T
OHD042157644  STANDARD OIL CHEMICAL CO                  K 71  B       0.0 T
OHD042157644  STANDARD OIL CHEMICAL CO                  M 24  A  311067.3 T 49  6  N 21  N 22  N 67  Y
TXD008081101  DUPONT EI DE NEMOURS & CO INC BEAU        K 69  A      66.7 T 68  1A N 2A  N 21  N 22  N
TXD008081101  DUPONT EI DE NEMOURS & CO INC BEAU        M 24  A  ~~312333.0~~ T 49  6  Y 21  N 22  N
                                                                 215,233

------------------------------ RCRA WASTE CODE=K027 WDESC=A07 ------------------------------------

                                                          R
                                                          E   K                    A     A     A     A     A
                                                          C   E                    V     V     V     V     V
F             N                                         B T   Y         Q U     A  A A   A A   A A   A A   A
C             A                                         O Y   L         T O T   T  I T   I T   I T   I T   I
I             M                                         O P   T         Y M R   R  L R   L R   L R   L R   L
D             E                                         K E   R         8 8 D   1  1 2   2 3   3 4   4 5   5

TXD068260977  MOBAY CORPORATION                         J 34  A    2331.0 T 2   1  N Q   N
WVD056866312  MOBAY CHEMICAL CORP                       J 40  A    ~~3034.0~~ T

------------------------------ RCRA WASTE CODE=K027 WDESC=AEA ------------------------------------

                                                          R
                                                          E   K                    A     A     A     A     A
                                                          C   E                    V     V     V     V     V
F             N                                         B T   Y         Q U     A  A A   A A   A A   A A   A
C             A                                         O Y   L         T O T   T  I T   I T   I T   I T   I
I             M                                         O P   T         Y M R   R  L R   L R   L R   L R   L
D             E                                         K E   R         8 8 D   1  1 2   2 3   3 4   4 5   5

LAD00061[illegible]  CECOS INTERNATIONAL INC            I 31  N       7.0 T 2   1  N 2   N
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                         REQUEST FOR TIN HOLDER                      19:38 Thursday, October 20, 1988  46
                  PREPARED BY DPRA, REQUEST NUMBER C0063A
                          DATA SOURCE: TSDR SOURCE

                NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

----------------------------------------------- RCRA WASTE CODE=K027 WDESC=B76 ------------------------------------------

                                                           R
                                                           E   K                              A       A        A        A        A
                                                           C   E                              V       V        V        V        V
F             N                                         B  T   Y             Q  U       A     A  A    A  A     A  A     A  A     A
C             A                                         O  Y   L             T  O  T    T     I  T    I  T     I  T     I  T     I
I             M                                         O  P   T             Y  M  R    R     L  R    L  R     L  R     L  R     L
D             E                                         K  E   R             0  0  D    1     1  2    2  3     3  4     4  5     5

TXD058260977  MOBAY CORPORATION                         J  38  A        3126.0  T  6    7A    N  41A  N
TXD058260977  MOBAY CORPORATION                         J  38  B       13227.0  T  39   1A    N  2A   N

----------------------------------------------- RCRA WASTE CODE=K027 WDESC=B90 ------------------------------------------

                                                           R
                                                           E   K                              A       A        A        A        A
                                                           C   E                              V       V        V        V        V
F             N                                         B  T   Y             Q  U       A     A  A    A  A     A  A     A  A     A
C             A                                         O  Y   L             T  O  T    T     I  T    I  T     I  T     I  T     I
I             M                                         O  P   T             Y  M  R    R     L  R    L  R     L  R     L  R     L
D             E                                         K  E   R             0  0  D    1     1  2    2  3     3  4     4  5     5

OHD087433744  CECOS INTERNATIONAL INC                   L  36  BK         82.0  T  20   7     N

----------------------------------------------- RCRA WASTE CODE=K093 WDESC=B ------------------------------------------

                                                           R
                                                           E   K                              A       A        A        A        A
                                                           C   E                              V       V        V        V        V
F             N                                         B  T   Y             Q  U       A     A  A    A  A     A  A     A  A     A
C             A                                         O  Y   L             T  O  T    T     I  T    I  T     I  T     I  T     I
I             M                                         O  P   T             Y  M  R    R     L  R    L  R     L  R     L  R     L
D             E                                         K  E   R             0  0  D    1     1  2    2  3     3  4     4  5     5

LAD000618298  CECOS INTERNATIONAL INC                   L  35  6         162.0  T  39   1A       2A

----------------------------------------------- RCRA WASTE CODE=K094 WDESC=B ------------------------------------------

                                                           R
                                                           E   K                              A       A        A        A        A
                                                           C   E                              V       V        V        V        V
F             N                                         B  T   Y             Q  U       A     A  A    A  A     A  A     A  A     A
C             A                                         O  Y   L             T  O  T    T     I  T    I  T     I  T     I  T     I
I             M                                         O  P   T             Y  M  R    R     L  R    L  R     L  R     L  R     L
D             E                                         K  E   R             0  0  D    1     1  2    2  3     3  4     4  5     5

LAD000618298  CECOS INTERNATIONAL INC                   1  [illegible]  6  [illegible].0  T  39   1A       2A
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                    REQUEST FOR TIM HOLDEN                              19:38 Thursday, October 20, 1988  46
                PREPARED BY OPHA, REQUEST NUMBER C0053A
                      DATA SOURCE: ISDR SOURCE

           NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------------------------- RCRA WASTE CODE=P029 WDESC=A06 ----------------------------------------

                                                           R
                                                           E   K                              A        A        A        A        A
                                                           C   E                              V        V        V        V        V
F             N                                         B  T   Y             Q  U       A     A  A     A  A     A  A     A  A     A
C             A                                         O  Y   L             T  O  T    T     I  T     I  T     I  T     I  T     I
I             M                                         O  P   T             Y  M  R    R     L  R     L  R     L  R     L  R     L
D             E                                         K  E   R             0  0  D    1     1  2     2  3     3  4     4  5     5

OHD007433744  CECOS INTERNATIONAL INC                   L  31  V           1.0  T  66   14    N  50    N

---------------------------------------------- RCRA WASTE CODE=P029 WDESC=B ------------------------------------------

                                                           R
                                                           E   K                              A        A        A        A        A
                                                           C   E                              V        V        V        V        V
F             N                                         B  T   Y             Q  U       A     A  A     A  A     A  A     A  A     A
C             A                                         O  Y   L             T  O  T    T     I  T     I  T     I  T     I  T     I
I             M                                         O  P   T             Y  M  R    R     L  R     L  R     L  R     L  R     L
D             E                                         K  E   R             0  0  D    1     1  2     2  3     3  4     4  5     5

MID005422514  DU-WEL HARTFORD INC                       K  69  A           0.0

---------------------------------------------- RCRA WASTE CODE=P029 WDESC=B10 ----------------------------------------

                                                           R
                                                           E   K                              A        A        A        A        A
                                                           C   E                              V        V        V        V        V
F             N                                         B  T   Y             Q  U       A     A  A     A  A     A  A     A  A     A
C             A                                         O  Y   L             T  O  T    T     I  T     I  T     I  T     I  T     I
I             M                                         O  P   T             Y  M  R    R     L  R     L  R     L  R     L  R     L
D             E                                         K  E   R             0  0  D    1     1  2     2  3     3  4     4  5     5

TXD027147115  MALONE SERVICE CO                         N  24  E           6.3  T

---------------------------------------------- RCRA WASTE CODE=P029 WDESC=B08 ----------------------------------------

                                                           R
                                                           E   K                              A        A        A        A        A
                                                           C   E                              V        V        V        V        V
F             N                                         B  T   Y             Q  U       A     A  A     A  A     A  A     A  A     A
C             A                                         O  Y   L             T  O  T    T     I  T     I  T     I  T     I  T     I
I             M                                         O  P   T             Y  M  R    R     L  R     L  R     L  R     L  R     L
D             E                                         K  E   R             0  0  D    1     1  2     2  3     3  4     4  5     5

NV1330010000  US ECOLOGY CHEM SITE INC                  I  05  N           0.2  T  57   51    N
NV1330010000  US ECOLOGY CHEM SITE INC                  I  05  N           0.2  T  57   51    N
```

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                      REQUEST FOR TIM HOLDEN                        19:40 Thursday, October 20, 1988  47
                PREPARED BY OPRA, REQUEST NUMBER C0053A
                     DATA SOURCE: ISDR SOURCE

              NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------------- RCRA WASTE CODE-P030 WDESC-A05 -------------------------------------------

                                                           R
                                                           E   K                        A     A     A     A     A
                                                           C   E                        V     V     V     V     V
F             N                                         B  T   Y            Q U     A   A A   A A   A A   A A   A
C             A                                         O  Y   L            T O T   T   I T   I T   I T   I T   I
I             M                                         O  P   T            Y M R   R   L R   L R   L R   L R   L
D             E                                         K  E   R            0 0 D   1   1 2   2 3   3 4   4 5   5

MID006013643  PARKE DAVIS DIVISION OF WARNER-LAMBERT    N  20  B      10000.0 G
TXD091270017  CECOS INTERNATIONAL INC.                  N  20  L         33.0 T 16  19  N 21  N 22  N

------------------------------------------- RCRA WASTE CODE-P030 WDESC-A06 -------------------------------------------

                                                           R
                                                           E   K                        A     A     A     A     A
                                                           C   E                        V     V     V     V     V
F             N                                         B  T   Y            Q U     A   A A   A A   A A   A A   A
C             A                                         O  Y   L            T O T   T   I T   I T   I T   I T   I
I             M                                         O  P   T            Y M R   R   L R   L R   L R   L R   L
D             E                                         K  E   R            0 0 D   1   1 2   2 3   3 4   4 5   5

CAD020748125  CASMALIA RESOURCES                        L  31  AL         5.0 T 17  20  N
ILD000805812  PEORIA DISPOSAL CO.                       L  31  U       6060.0 G 66  14  N 60  N
ILD010284248  CID LANDFILL                              L  31  AZ        90.0 G 17  20  N

------------------------------------------- RCRA WASTE CODE-P030 WDESC-A08 -------------------------------------------

                                                           R
                                                           E   K                        A     A     A     A     A
                                                           C   E                        V     V     V     V     V
F             N                                         B  T   Y            Q U     A   A A   A A   A A   A A   A
C             A                                         O  Y   L            T O T   T   I T   I T   I T   I T   I
I             M                                         O  P   T            Y M R   R   L R   L R   L R   L R   L
D             E                                         K  E   R            0 0 D   1   1 2   2 3   3 4   4 5   5

CAD020748125  CASMALIA RESOURCES                        L  31  AN         1.0 T 17  20  N
NYD080336241  CECOS INTERNATIONAL                       L  31  AF         9.0 T 66  14  N 60  N
OKD065438376  USPCI                                     L  31  S         34.0 T 2   1   N 2   N
```

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                                   REQUEST FOR TIM HOLDEN                       19:30 Thursday, October 20, 1988  48
                             PREPARED BY OPRA, REQUEST NUMBER C0053A
                                   DATA SOURCE: TSDR SOURCE

                        NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------- RCRA WASTE CODE-P030 WDESC-A12 ------------------------------------

                                       R
                                       E  K                           A     A     A     A     A
                                       C  E                           V     V     V     V     V
F         N                         B  T  Y         Q  U        A     A  A  A  A  A  A  A  A  A
C         A                         O  Y  L         T  O  T     T     I  T  I  T  I  T  I  T  I
I         M                         O  P  T         Y  M  R     R     L  R  L  R  L  R  L  R  L
D         E                         K  E  R         0  0  D     1     1  2  2  3  3  4  4  5  5

TXD027147115  MALONE SERVICE CO     N  20 H      13.0  T

------------------------------- RCRA WASTE CODE-P030 WDESC-0 --------------------------------------

                                       R
                                       E  K                           A     A     A     A     A
                                       C  E                           V     V     V     V     V
F         N                         B  T  Y         Q  U        A     A  A  A  A  A  A  A  A  A
C         A                         O  Y  L         T  O  T     T     I  T  I  T  I  T  I  T  I
I         M                         O  P  T         Y  M  R     R     L  R  L  R  L  R  L  R  L
D         E                         K  E  R         0  0  D     1     1  2  2  3  3  4  4  5  5

LAD000618290  CECOS INTERNATIONAL INC   L  36 BI      0.0  T
LAD000618290  CECOS INTERNATIONAL INC   L  36 P       1.0  T
LAD000618290  CECOS INTERNATIONAL INC   L  36 Q       1.0  T

------------------------------- RCRA WASTE CODE-P030 WDESC-B10 ------------------------------------

                                       R
                                       E  K                           A     A     A     A     A
                                       C  E                           V     V     V     V     V
F         N                         B  T  Y         Q  U        A     A  A  A  A  A  A  A  A  A
C         A                         O  Y  L         T  O  T     T     I  T  I  T  I  T  I  T  I
I         M                         O  P  T         Y  M  R     R     L  R  L  R  L  R  L  R  L
D         E                         K  E  R         0  0  D     1     1  2  2  3  3  4  4  5  5

TXD027147115  MALONE SERVICE CO     N  24 L       6.3  T
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```
                          REQUEST FOR TIM HOLDEN                    19:38 Thursday, October 20, 1988  49
                  PREPARED BY DPRA, REQUEST NUMBER C0853A
                         DATA SOURCE: TSDR SOURCE

              NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------ RCRA WASTE CODE-P030 WDESC-056 ------------------------------------

                                                 R
                                                 E   K                       A      A      A      A      A
                                                 C   E                       V      V      V      V      V
F            N                               B   T   Y    Q    U        A    A  A   A  A   A  A   A  A   A
C            A                               O   Y   L    T    O   T    T    I  T   I  T   I  T   I  T   I
I            M                               O   P   T    Y    M   R    R    L  R   L  R   L  R   L  R   L
D            E                               K   E   R    0    0   D    1    1  2   2  3   3  4   4  5   5

NVT330010000 US ECOLOGY CHEM SITE INC        L   36  AB  0.7   T   67   63   N
NVT330010000 US ECOLOGY CHEM SITE INC        L   36  AE  1.0   T   67   63   N
NVT330010000 US ECOLOGY CHEM SITE INC        L   36  D   0.6   T   67   63   N
NVT330010000 US ECOLOGY CHEM SITE INC        L   36  R   0.6   T   67   63   N

------------------------------------ RCRA WASTE CODE-P030 WDESC-088 ------------------------------------

                                                 R
                                                 E   K                       A      A      A      A      A
                                                 C   E                       V      V      V      V      V
F            N                               B   T   Y    Q    U        A    A  A   A  A   A  A   A  A   A
C            A                               O   Y   L    T    O   T    T    I  T   I  T   I  T   I  T   I
I            M                               O   P   T    Y    M   R    R    L  R   L  R   L  R   L  R   L
D            E                               K   E   R    0    0   D    1    1  2   2  3   3  4   4  5   5

NVT330010000 US ECOLOGY CHEM SITE INC        L   36  N   2.2   T   67   63   N
NVT330010000 US ECOLOGY CHEM SITE INC        L   36  N   0.2   T   67   63   N
NVT330010000 US ECOLOGY CHEM SITE INC        L   36  U   1.0   T   67   63   N
TXD069462340 TEXAS ECOLOGISTS INC.           L   36  7   1.0   T   67   63   N

------------------------------------ RCRA WASTE CODE-P039 WDESC-A08 ------------------------------------

                                                 R
                                                 E   K                       A      A      A      A      A
                                                 C   E                       V      V      V      V      V
F            N                               B   T   Y    Q    U        A    A  A   A  A   A  A   A  A   A
C            A                               O   Y   L    T    O   T    T    I  T   I  T   I  T   I  T   I
I            M                               O   P   T    Y    M   R    R    L  R   L  R   L  R   L  R   L
D            E                               K   E   R    0    0   D    1    1  2   2  3   3  4   4  5   5

OHD087433744 CECOS INTERNATIONAL INC         L   31  W   1.0   T   26   26   N  18  N  28  N
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                          REQUEST FOR TIM HOLDEN                    19:30 Thursday, October 20, 1988  60
                     PREPARED BY DPRA, REQUEST NUMBER L0863A
                          DATA SOURCE: TSDR SOURCE

                    NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------ RCRA WASTE CODE=P044 WDESC=A06 ------------------------------

                                                          R
                                                          E  K                        A      A      A      A      A
                                                          C  E                        V      V      V      V      V
F              N                                       B  T  Y          Q  U      A   A  A   A  A   A  A   A  A   A
C              A                                       O  Y  L          T  O  T   T   I  T   I  T   I  T   I  T   I
I              M                                       O  P  T          Y  M  R   R   L  R   L  R   L  R   L  R   L
D              E                                       K  E  R          8  8  D   1   1  2   2  3   3  4   4  5   5

OHD087433744   CECOS INTERNATIONAL INC                 L  31 X        7.0  T

------------------------------ RCRA WASTE CODE=P044 WDESC=A08 ------------------------------

                                                          R
                                                          E  K                        A      A      A      A      A
                                                          C  E                        V      V      V      V      V
F              N                                       B  T  Y          Q  U      A   A  A   A  A   A  A   A  A   A
C              A                                       O  Y  L          T  O  T   T   I  T   I  T   I  T   I  T   I
I              M                                       O  P  T          Y  M  R   R   L  R   L  R   L  R   L  R   L
D              E                                       K  E  R          8  8  D   1   1  2   2  3   3  4   4  5   5

NYD080336241   CECOS INTERNATIONAL                     L  31 A6       4.0  T

------------------------------ RCRA WASTE CODE=P063 WDESC=A06 ------------------------------

                                                          R
                                                          E  K                        A      A      A      A      A
                                                          C  E                        V      V      V      V      V
F              N                                       B  T  Y          Q  U      A   A  A   A  A   A  A   A  A   A
C              A                                       O  Y  L          T  O  T   T   I  T   I  T   I  T   I  T   I
I              M                                       O  P  T          Y  M  R   R   L  R   L  R   L  R   L  R   L
D              E                                       K  E  R          8  8  D   1   1  2   2  3   3  4   4  5   5

ALD001221902   CIBA-GEIGY CORP                         K  56 C        0.8  T

------------------------------ RCRA WASTE CODE=P063 WDESC=A06 ------------------------------

                                                          R
                                                          E  K                        A      A      A      A      A
                                                          C  E                        V      V      V      V      V
F              N                                       B  T  Y          Q  U      A   A  A   A  A   A  A   A  A   A
C              A                                       O  Y  L          T  O  T   T   I  T   I  T   I  T   I  T   I
I              M                                       O  P  T          Y  M  R   R   L  R   L  R   L  R   L  R   L
D              E                                       K  E  R          8  8  D   1   1  2   2  3   3  4   4  5   5

TXD0000[illegible]49   GULF COAST WASTE DISPOSAL AUTHORITY     L  [illegible] [illegible]    1[illegible].0  T  1
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NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

RCRA WASTE CODE=P063 WDESC=A00

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY80	UOM80	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
LAD000176390	AMERICAN CYANAMID CO	K	61	I	20.0	T	10	12	N	13	N	49	N				

RCRA WASTE CODE=P063 WDESC=B00

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY80	UOM80	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
TXD001700806	MONSANTO CO	K	59	A	0.0												
TXD001700806	MONSANTO CO	N	24	A	110.0	M	49	6	N	21	N	22	N				
TXD001700806	MONSANTO CO	N	24	B	10.0	M	49	6	N	21	N	22	N				

RCRA WASTE CODE=P063 WDESC=B64

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY80	UOM80	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
TXD000751172	STANDARD OIL CHEMICAL CO	N	24	A	66.3	M	36	6	N	21	N	22	N	16	Y		

RCRA WASTE CODE=P063 WDESC=B10

FCID	NAME	BOOK	RECTYPE	KEYLTR	QTY80	UOM80	TRD	ATR1	AVAIL1	ATR2	AVAIL2	ATR3	AVAIL3	ATR4	AVAIL4	ATR5	AVAIL5
TXD000751172	STANDARD OIL CHEMICAL CO	[illegible]	[illegible]	A	[illegible]	[illegible]	[illegible]	1	N	[illegible]	N						

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                              REQUEST FOR TIM HOLDEN                          19:38 Thursday, October 20, 1988  52
                      PREPARED BY OPHA, REQUEST NUMBER C0663A
                              DATA SOURCE: TSDR SOURCE

                NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------- RCRA WASTE CODE=P063 WDESC=0XA ----------------------------

                                                 R
                                                 E  K                       A     A     A     A     A
                                                 C  E                       V     V     V     V     V
F             N                               B  T  Y         Q  U      A   A A   A A   A A   A A   A
C             A                               O  Y  L         T  O  T   T   I T   I T   I T   I T   I
I             M                               O  P  T         Y  M  R   R   L R   L R   L R   L R   L
D             E                               K  E  R         0  0  D   1   1 2   2 3   3 4   4 5   5

TXD000751172  STANDARD OIL CHEMICAL CO        L  35 B      62.0  T  2   1   N 2   N

---------------------------- RCRA WASTE CODE=P064 WDESC=036 ----------------------------

                                                 R
                                                 E  K                       A     A     A     A     A
                                                 C  E                       V     V     V     V     V
F             N                               B  T  Y         Q  U      A   A A   A A   A A   A A   A
C             A                               O  Y  L         T  O  T   T   I T   I T   I T   I T   I
I             M                               O  P  T         Y  M  R   R   L R   L R   L R   L R   L
D             E                               K  E  R         0  0  D   1   1 2   2 3   3 4   4 5   5

ILD000805812  PEORIA DISPOSAL CO.             L  35 Q   10100.0  G

---------------------------- RCRA WASTE CODE=P064 WDESC=0IO ----------------------------

                                                 R
                                                 E  K                       A     A     A     A     A
                                                 C  E                       V     V     V     V     V
F             N                               B  T  Y         Q  U      A   A A   A A   A A   A A   A
C             A                               O  Y  L         T  O  T   T   I T   I T   I T   I T   I
I             M                               O  P  T         Y  M  R   R   L R   L R   L R   L R   L
D             E                               K  E  R         0  0  D   1   1 2   2 3   3 4   4 5   5

ILD000805812  PEORIA DISPOSAL CO.             L  36 AI   2020.0  G

---------------------------- RCRA WASTE CODE=P069 WDESC=A00 ----------------------------

                                                 R
                                                 E  K                       A     A     A     A     A
                                                 C  E                       V     V     V     V     V
F             N                               B  T  Y         Q  U      A   A A   A A   A A   A A   A
C             A                               O  Y  L         T  O  T   T   I T   I T   I T   I T   I
I             M                               O  P  T         Y  M  R   R   L R   L R   L R   L R   L
D             E                               K  E  R         0  0  D   1   1 2   2 3   3 4   4 5   5

LAD008175390  AMERICAN CYANAMID CO            K  61 J       1.0  T  36  10  N 20  N 5   N 21  N 22  N
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                    REQUEST FOR TIM HOLDEN                          19:30 Thursday, October 20, 1988  53
              PREPARED BY OPRA, REQUEST NUMBER C0853A
                    DATA SOURCE: TSDR SOURCE

                         NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------------------------- RCRA WASTE CODE-P071 WDESC-A05 -----------------------------------------------

                                                           R
                                                           E   K                            A        A        A        A        A
                                                           C   E                            V        V        V        V        V
F                N                                      B  T   Y          Q  U       A      A  A     A  A     A  A     A  A     A
C                A                                      O  Y   L          T  O  T    T      I  T     I  T     I  T     I  T     I
I                M                                      O  P   T          Y  M  R    R      L  R     L  R     L  R     L  R     L
D                E                                      K  E   R          8  8  D    1      1  2     2  3     3  4     4  5     5

TXD091270017  CECOS INTERNATIONAL INC.                  N  20  N        0.0  T  6    6        21       22

------------------------------------------------------- RCRA WASTE CODE-P071 WDESC-A06 -----------------------------------------------

                                                           R
                                                           E   K                            A        A        A        A        A
                                                           C   E                            V        V        V        V        V
F                N                                      B  T   Y          Q  U       A      A  A     A  A     A  A     A  A     A
C                A                                      O  Y   L          T  O  T    T      I  T     I  T     I  T     I  T     I
I                M                                      O  P   T          Y  M  R    R      L  R     L  R     L  R     L  R     L
D                E                                      K  E   R          8  8  D    1      1  2     2  3     3  4     4  5     5

ILD000005812  PEORIA DISPOSAL CO.                       L  31  V      660.0  0  1    1      M
UTD991301748  US POLLUTION CONTROL INC GRASSY MTN FAC   L  31  I      193.0  T  1    1      M

------------------------------------------------------- RCRA WASTE CODE-P071 WDESC-A13 -----------------------------------------------

                                                           R
                                                           E   K                            A        A        A        A        A
                                                           C   E                            V        V        V        V        V
F                N                                      B  T   Y          Q  U       A      A  A     A  A     A  A     A  A     A
C                A                                      O  Y   L          T  O  T    T      I  T     I  T     I  T     I  T     I
I                M                                      O  P   T          Y  M  R    R      L  R     L  R     L  R     L  R     L
D                E                                      K  E   R          8  8  D    1      1  2     2  3     3  4     4  5     5

ALD004019048  MONSANTO CO ANNISTON FACILITY             L  31  B       90.0  T

------------------------------------------------------- RCRA WASTE CODE-P071 WDESC-B -------------------------------------------------

                                                           R
                                                           E   K                            A        A        A        A        A
                                                           C   E                            V        V        V        V        V
F                N                                      B  T   Y          Q  U       A      A  A     A  A     A  A     A  A     A
C                A                                      O  Y   L          T  O  T    T      I  T     I  T     I  T     I  T     I
I                M                                      O  P   T          Y  M  R    R      L  R     L  R     L  R     L  R     L
D                E                                      K  E   R          8  8  D    1      1  2     2  3     3  4     4  5     5

LAD000618298  CECOS INTERNATIONAL INC                   L  35  V        9.0  T
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                                   REQUEST FOR TIM HOLDEN                    19:30 Thursday, October 20, 1988  64
                           PREPARED BY DPRA, REQUEST NUMBER C0853A
                                   DATA SOURCE: TSDR SOURCE

                         NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------- RCRA WASTE CODE-P[illegible]5 WDESC-060 -------------------------------------------

                                                 R
                                                 E  K                                 A        A        A        A        A
                                                 C  E                                 V        V        V        V        V
F              N                              B  T  Y           Q  U        A         A  A     A  A     A  A     A  A     A
C              A                              O  Y  L           T  O  T     T         I  T     I  T     I  T     I  T     I
I              M                              O  P  T           Y  M  R     R         L  R     L  R     L  R     L  R     L
D              E                              K  E  R           0  0  D     1         1  2     2  3     3  4     4  5     5

TXD027147116   MALONE SERVICE CO              N  24 X        12.0  T

------------------------------- RCRA WASTE CODE-P[illegible]6 WDESC-A06 -------------------------------------------

                                                 R
                                                 E  K                                 A        A        A        A        A
                                                 C  E                                 V        V        V        V        V
F              N                              B  T  Y           Q  U        A         A  A     A  A     A  A     A  A     A
C              A                              O  Y  L           T  O  T     T         I  T     I  T     I  T     I  T     I
I              M                              O  P  T           Y  M  R     R         L  R     L  R     L  R     L  R     L
D              E                              K  E  R           0  0  D     1         1  2     2  3     3  4     4  5     5

NYD080336241   CECOS INTERNATIONAL            L  31 AI       42.0  T

------------------------------- RCRA WASTE CODE-P009 WDESC-A06 --------------------------------------------------

                                                 R
                                                 E  K                                 A        A        A        A        A
                                                 C  E                                 V        V        V        V        V
F              N                              B  T  Y           Q  U        A         A  A     A  A     A  A     A  A     A
C              A                              O  Y  L           T  O  T     T         I  T     I  T     I  T     I  T     I
I              M                              O  P  T           Y  M  R     R         L  R     L  R     L  R     L  R     L
D              E                              K  E  R           0  0  D     1         1  2     2  3     3  4     4  5     5

TXD091270017   CECOS INTERNATIONAL INC.       N  20 M         6.0  T

------------------------------- RCRA WASTE CODE-P009 WDESC-A08 --------------------------------------------------

                                                 R
                                                 E  K                                 A        A        A        A        A
                                                 C  E                                 V        V        V        V        V
F              N                              B  T  Y           Q  U        A         A  A     A  A     A  A     A  A     A
C              A                              O  Y  L           T  O  T     T         I  T     I  T     I  T     I  T     I
I              M                              O  P  T           Y  M  R     R         L  R     L  R     L  R     L  R     L
D              E                              K  E  R           0  0  D     1         1  2     2  3     3  4     4  5     5

NVT330010000   US ECOLOGY CHEM SITE INC       I  11 I         1.0  T  39    1A        N  2A    N
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NOT Proposed

Not Proposed

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                   REQUEST FOR TIM HOLDEN                        19:38 Thursday, October 20, 1988  65
        PREPARED BY OPPA, REQUEST NUMBER C0063A
                   DATA SOURCE: TSDR SOURCE

          NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------ RCRA WASTE CODE-P089 WDESC-A13 ------------------------------

                                                 R
                                                 E  K                A    A    A    A    A
                                                 C  E      Q U       V    V    V    V    V
F             N                               B  T  Y      T O    A  A A  A A  A A  A A  A
C             A                               O  Y  L      Y M T  T  I T  I T  I T  I T  I
I             M                               O  P  T      8 8 R  R  L R  L R  L R  L R  L
D             E                               K  E  R      8 8 D  1  1 2  2 3  3 4  4 5  5

ALD004019048  MONSANTO CO ANNISTON FACILITY   L 31  A    111.0 T

------------------------------ RCRA WASTE CODE-P089 WDESC-B90 ------------------------------

                                                 R
                                                 E  K                A    A    A    A    A
                                                 C  E      Q U       V    V    V    V    V
F             N                               B  T  Y      T O    A  A A  A A  A A  A A  A
C             A                               O  Y  L      Y M T  T  I T  I T  I T  I T  I
I             M                               O  P  T      8 8 R  R  L R  L R  L R  L R  L
D             E                               K  E  R      8 8 D  1  1 2  2 3  3 4  4 5  5

OHD087433744  CECOS INTERNATIONAL INC         L 35  W      2.0 T 2  1  N 2  N

------------------------------ RCRA WASTE CODE-P094 WDESC-A06 ------------------------------

                                                 R
                                                 E  K                A    A    A    A    A
                                                 C  E      Q U       V    V    V    V    V
F             N                               B  T  Y      T O    A  A A  A A  A A  A A  A
C             A                               O  Y  L      Y M T  T  I T  I T  I T  I T  I
I             M                               O  P  T      8 8 R  R  L R  L R  L R  L R  L
D             E                               K  E  R      8 8 D  1  1 2  2 3  3 4  4 5  5

ILD000805812  PEORIA DISPOSAL CO.             L 31  W  36360.0 G 1  1  N

------------------------------ RCRA WASTE CODE-P094 WDESC-A08 ------------------------------

                                                 R
                                                 E  K                A    A    A    A    A
                                                 C  E      Q U       V    V    V    V    V
F             N                               B  T  Y      T O    A  A A  A A  A A  A A  A
C             A                               O  Y  L      Y M T  T  I T  I T  I T  I T  I
I             M                               O  P  T      8 8 R  R  L R  L R  L R  L R  L
D             E                               K  E  R      8 8 D  1  1 2  2 3  3 4  4 5  5

NVT310010000  US ECOLOGY CHEM SITE INC        L 31  K      5.0 T 39 1A N 2A N
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                         REQUEST FOR TIM HOLDEN                    19:38 Thursday, October 20, 1988  56
                  PREPARED BY DPRA, REQUEST NUMBER C0853A
                        DATA SOURCE: TSDR SOURCE

              NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------ RCRA WASTE CODE-P098 WDESC-A12 ------------------------------------

                                                     R
                                                     E  K                   A     A     A     A     A
                                                     C  E                   V     V     V     V     V
F             N                                   B  T  Y       Q U     A   A A   A A   A A   A A   A
C             A                                   O  Y  L       T O T   T   I T   I T   I T   I T   I
I             M                                   O  P  T       Y M R   R   L R   L R   L R   L R   L
D             E                                   K  E  R       8 8 D   1   1 2   2 3   3 4   4 5   5

TXD027147115  MALONE SERVICE CO                   M  20 D     6.3 T

------------------------------------ RCRA WASTE CODE-P098 WDESC-B --------------------------------------

                                                     R
                                                     E  K                   A     A     A     A     A
                                                     C  E                   V     V     V     V     V
F             N                                   B  T  Y       Q U     A   A A   A A   A A   A A   A
C             A                                   O  Y  L       T O T   T   I T   I T   I T   I T   I
I             M                                   O  P  T       Y M R   R   L R   L R   L R   L R   L
D             E                                   K  E  R       8 8 D   1   1 2   2 3   3 4   4 5   5

LAD000618298  CECOS INTERNATIONAL INC             L  36 BI    0.0 T
LAD000618298  CECOS INTERNATIONAL INC             L  36 W     0.0 T

------------------------------------ RCRA WASTE CODE-P098 WDESC-B10 ------------------------------------

                                                     R
                                                     E  K                   A     A     A     A     A
                                                     C  E                   V     V     V     V     V
F             N                                   B  T  Y       Q U     A   A A   A A   A A   A A   A
C             A                                   O  Y  L       T O T   T   I T   I T   I T   I T   I
I             M                                   O  P  T       Y M R   R   L R   L R   L R   L R   L
D             E                                   K  E  R       8 8 D   1   1 2   2 3   3 4   4 5   5

TXD027147115  MALONE SERVICE CO                   M  24 E     6.3 T

------------------------------------ RCRA WASTE CODE-P098 WDESC-B65 ------------------------------------

                                                     R
                                                     E  K                   A     A     A     A     A
                                                     C  E                   V     V     V     V     V
F             N                                   B  T  Y       Q U     A   A A   A A   A A   A A   A
C             A                                   O  Y  L       T O T   T   I T   I T   I T   I T   I
I             M                                   O  P  T       Y M R   R   L R   L R   L R   L R   L
D             E                                   K  E  R       8 8 D   1   1 2   2 3   3 4   4 5   5

NV1330010000  US ECOLOGY CHEM SITE INC            L  35 AB    0.7 1 57  53  N
NV1330010000  US ECOLOGY CHEM SITE INC            L  35 AI    1.0 1 57  53  N
NV1330010000  US ECOLOGY CHEM SITE INC            L  65 B     0.5 1 57  53  N
NV1330010000  US ECOLOGY CHEM SITE INC            L  35 I     1.0 1 57  53  N
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                    REQUEST FOR TIM HOLDEN                                 19:30 Thursday, October 20, 1988  57
             PREPARED BY OPRA, REQUEST NUMBER C0053A
                    DATA SOURCE: TSDR SOURCE

                    NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

--------------------------------------------- RCRA WASTE CODE-P098 WDESC-B88 ---------------------------------------------

                                                      R
                                                      E  K                             A     A     A     A     A
                                                      C  E                             V     V     V     V     V
F            N                                     B  T  Y.        Q  U         A      A  A  A  A  A  A  A  A  A
C            A                                     O  Y  L         T  O  T      T      I  T  I  T  I  T  I  T  I
I            M                                     O  P  T         Y  M  R      R      L  R  L  R  L  R  L  R  L
D            E                                     K  E  R         8  8  D      1      1  2  2  3  3  4  4  5  5

NVT330010000  US ECOLOGY CHEM SITE INC             L  36 AD      0.6  T  67     63     N
NVT330010000  US ECOLOGY CHEM SITE INC             L  36 H       2.2  T  67     63     N
NVT330010000  US ECOLOGY CHEM SITE INC             L  36 N       0.2  T  67     63     N

--------------------------------------------- RCRA WASTE CODE-P104 WDESC-B66 ---------------------------------------------

                                                      R
                                                      E  K                             A     A     A     A     A
                                                      C  E                             V     V     V     V     V
F            N                                     B  T  Y         Q  U         A      A  A  A  A  A  A  A  A  A
C            A                                     O  Y  L         T  O  T      T      I  T  I  T  I  T  I  T  I
I            M                                     O  P  T         Y  M  R      R      L  R  L  R  L  R  L  R  L
D            E                                     K  E  R         8  8  D      1      1  2  2  3  3  4  4  5  5

NVT330010000  US ECOLOGY CHEM SITE INC             L  36 P       0.6  T  67     63     N
TXD069452340  TEXAS ECOLOGISTS INC.                L  36 1       3.0  T  67     63     N

--------------------------------------------- RCRA WASTE CODE-P104 WDESC-B88 ---------------------------------------------

                                                      R
                                                      E  K                             A     A     A     A     A
                                                      C  E                             V     V     V     V     V
F            N                                     B  T  Y         Q  U         A      A  A  A  A  A  A  A  A  A
C            A                                     O  Y  L         T  O  T      T      I  T  I  T  I  T  I  T  I
I            M                                     O  P  T         Y  M  R      R      L  R  L  R  L  R  L  R  L
D            E                                     K  E  R         8  8  D      1      1  2  2  3  3  4  4  5  5

NVT330010000  US ECOLOGY CHEM SITE INC             L  36 N       0.2  T  67     63     N

--------------------------------------------- RCRA WASTE CODE-P106 WDESC-A05 ---------------------------------------------

                                                      R
                                                      E  K                             A     A     A     A     A
                                                      C  E                             V     V     V     V     V
F            N                                     B  T  Y         Q  U         A      A  A  A  A  A  A  A  A  A
C            A                                     O  Y  L         T  O  T      T      I  T  I  T  I  T  I  T  I
I            M                                     O  P  T         Y  M  R      R      L  R  L  R  L  R  L  R  L
D            E                                     K  E  R         8  8  D      1      1  2  2  3  3  4  4  5  5

TXD069450278  HOECHST CELANESE  CORPORATION        K  36 AP      0.0  G
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                      REQUEST FOR TIM HOLMAN                      19:56 Thursday, October 20, 1988  58
                PREPARED BY OPRA, REQUEST NUMBER C00SJA
                      DATA SOURCE: ISUR SOURCE

            NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

----------------------------------- RCRA WASTE CODE-P106 WDESC-A06 -----------------------------------
                                               R
                                               E   K                    A      A      A      A      A
                                               C   E                    V      V      V      V      V
F             N                             B  T   Y      Q  U      A   A  A   A  A   A  A   A  A   A
C             A                             O  Y   L      T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                             O  P   T      Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                             K  E   R      8  8  D   1   1  2   2  3   3  4   4  5   5
CAD020740126  CASMALIA RESOURCES            L  31  AP   1.0  T  17  20  N
OHD087433744  CECOS INTERNATIONAL INC       L  31  Y    1.0  T  66  14  N  60  N

----------------------------------- RCRA WASTE CODE-P106 WDESC-A08 -----------------------------------
                                               R
                                               E   K                    A      A      A      A      A
                                               C   E                    V      V      V      V      V
F             N                             B  T   Y      Q  U      A   A  A   A  A   A  A   A  A   A
C             A                             O  Y   L      T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                             O  P   T      Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                             K  E   R      8  8  D   1   1  2   2  3   3  4   4  5   5
CAD020740126  CASMALIA RESOURCES            L  31  AQ   1.0  T  17  20  N
NYD080336241  CECOS INTERNATIONAL           L  31  AJ   6.0  T
OKD065438376  USPCI                         L  31  R   12.0  T  17  20  N

----------------------------------- RCRA WASTE CODE-P106 WDESC-B -------------------------------------
                                               R
                                               E   K                    A      A      A      A      A
                                               C   E                    V      V      V      V      V
F             N                             B  T   Y      Q  U      A   A  A   A  A   A  A   A  A   A
C             A                             O  Y   L      T  O  T   T   I  T   I  T   I  T   I  T   I
I             M                             O  P   T      Y  M  R   R   L  R   L  R   L  R   L  R   L
D             E                             K  E   R      8  8  D   1   1  2   2  3   3  4   4  5   5
LAD000618298  CECOS INTERNATIONAL INC       L  35  AR   0.1  T
LAD000618298  CECOS INTERNATIONAL INC       L  35  B1   0.0  T
MID005422514  DU WEL HARTFORD INC           K  59  A    0.0
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                            REQUEST FOR TIM HOLDEN                       19:30 Thursday, October 20, 1988  59
                      PREPARED BY OPRA, REQUEST NUMBER C0863A
                            DATA SOURCE: TSDR SOURCE

                  NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------------ RCRA WASTE CODE-P106 WDESC-000 ------------------------------------------

                                                 R
                                                 E   K                        A      A      A      A      A
                                                 C   E                        V      V      V      V      V
F              N                             B   T   Y        Q   U       A   A  A   A  A   A  A   A  A   A
C              A                             O   Y   L        T   O   T   T   I  T   I  T   I  T   I  T   I
I              M                             O   P   T        Y   M   R   R   L  R   L  R   L  R   L  R   L
D              E                             K   E   R        8   8   D   1   1  2   2  3   3  4   4  5   5

GAD003324986   MERCK & CO INC                K  69   A      0.0   G

------------------------------------------ RCRA WASTE CODE-P106 WDESC-047 ------------------------------------------

                                                 R
                                                 E   K                        A      A      A      A      A
                                                 C   E                        V      V      V      V      V
F              N                             B   T   Y        Q   U       A   A  A   A  A   A  A   A  A   A
C              A                             O   Y   L        T   O   T   T   I  T   I  T   I  T   I  T   I
I              M                             O   P   T        Y   M   R   R   L  R   L  R   L  R   L  R   L
D              E                             K   E   R        8   8   D   1   1  2   2  3   3  4   4  5   5

OHD087433744   CECOS INTERNATIONAL INC       L  36   AE     1.0   T

------------------------------------------ RCRA WASTE CODE-P106 WDESC-066 ------------------------------------------

                                                 R
                                                 E   K                        A      A      A      A      A
                                                 C   E                        V      V      V      V      V
F              N                             B   T   Y        Q   U       A   A  A   A  A   A  A   A  A   A
C              A                             O   Y   L        T   O   T   T   I  T   I  T   I  T   I  T   I
I              M                             O   P   T        Y   M   R   R   L  R   L  R   L  R   L  R   L
D              E                             K   E   R        8   8   D   1   1  2   2  3   3  4   4  5   5

NVT330010000   US ECOLOGY CHEM SITE INC      L  35   AB     0.7   T  67  63   N
NVT330010000   US ECOLOGY CHEM SITE INC      L  35   AE     1.0   T  67  63   N
NVT330010000   US ECOLOGY CHEM SITE INC      L  35   I      1.0   T  67  63   N
NVT330010000   US ECOLOGY CHEM SITE INC      L  36   P      0.5   T  67  63   N

------------------------------------------ RCRA WASTE CODE-P106 WDESC-006 ------------------------------------------

                                                 R
                                                 E   K                        A      A      A      A      A
                                                 C   E                        V      V      V      V      V
F              N                             B   T   Y        Q   U       A   A  A   A  A   A  A   A  A   A
C              A                             O   Y   L        T   O   T   T   I  T   I  T   I  T   I  T   I
I              M                             O   P   T        Y   M   R   R   L  R   L  R   L  R   L  R   L
D              E                             K   E   R        8   8   D   1   1  2   2  3   3  4   4  5   5

NVT330010000   US ECOLOGY CHEM SITE INC      L  35   H  [illegible] T  57  53   N
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                                   REQUEST FOR TIM HOLDEN                          19:38 Thursday, October 20, 1988  60
                           PREPARED BY OPRA, REQUEST NUMBER C0053A
                                   DATA SOURCE: TSDR SOURCE

                         NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

--------------------------------------- RCRA WASTE CODE P100 WDESC-B ------------------------------------------

                                                              R
                                                              E  K                       A    A    A    A    A
F             N                                               C  E                       V    V    V    V    V
C             A                                            B  T  Y     Q  U        A     A A  A A  A A  A A  A
I             N                                            O  Y  L     T  O  T     T     I T  I T  I T  I T  I
D             E                                            O  P  T     Y  M  R     R     L R  L R  L R  L R  L
                                                           K  E  R     0  0  D     1     1 2  2 3  3 4  4 5  5

LAD000618298  CECOS INTERNATIONAL INC                      L  35 AE   0.6 T

--------------------------------------- RCRA WASTE CODE-P121 WDESC-B66 ----------------------------------------

                                                              R
                                                              E  K                       A    A    A    A    A
F             N                                               C  E                       V    V    V    V    V
C             A                                            B  T  Y     Q  U        A     A A  A A  A A  A A  A
I             N                                            O  Y  L     T  O  T     T     I T  I T  I T  I T  I
D             E                                            O  P  T     Y  M  R     R     L R  L R  L R  L R  L
                                                           K  E  R     0  0  D     1     1 2  2 3  3 4  4 5  5

NVT330010000  US ECOLOGY CHEM SITE INC                     L  35 I    1.0 T  57    63    N
NVT330010000  US ECOLOGY CHEM SITE INC                     L  35 R    0.6 T  57    63    N

--------------------------------------- RCRA WASTE CODE-U020 WDESC-A06 ----------------------------------------

                                                              R
                                                              E  K                       A    A    A    A    A
F             N                                               C  E                       V    V    V    V    V
C             A                                            B  T  Y     Q  U        A     A A  A A  A A  A A  A
I             N                                            O  Y  L     T  O  T     T     I T  I T  I T  I T  I
D             E                                            O  P  T     Y  M  R     R     L R  L R  L R  L R  L
                                                           K  E  R     0  0  D     1     1 2  2 3  3 4  4 5  5

NVT330010000  US ECOLOGY CHEM SITE INC                     L  31 N 1622.0 T
UTD991301748  US POLLUTION CONTROL INC GRASSY MTN FAC      L  31 L   87.0 T

--------------------------------------- RCRA WASTE CODE-U020 WDESC-B90 ----------------------------------------

                                                              R
                                                              E  K                       A    A    A    A    A
F             N                                               C  E                       V    V    V    V    V
C             A                                            B  T  Y     Q  U        A     A A  A A  A A  A A  A
I             N                                            O  Y  L     T  O  T     T     I T  I T  I T  I T  I
D             E                                            O  P  T     Y  M  R     R     L R  L R  L R  L R  L
                                                           K  E  R     0  0  D     1     1 2  2 3  3 4  4 5  5

OHD087433744  CECOS INTERNATIONAL INC                      L  35 LT   2.0 T  20    7     N
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                    REQUEST FOR TIM HOLDEN                              19:38 Thursday, October 20, 1988  61
             PREPARED BY OPRA, REQUEST NUMBER C0063A
                   DATA SOURCE: TSDR SOURCE

          NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------- RCRA WASTE CODE=U069 WDESC=A06 -------------------------------

                                                R
                                                E  K                   A     A     A     A     A
                                                C  E                   V     V     V     V     V
F              N                             B  T  Y     Q  U      A   A A   A A   A A   A A   A
C              A                             O  Y  L     T  O  T   T   I T   I T   I T   I T   I
I              M                             O  P  T     Y  M  R   R   L R   L R   L R   L R   L
D              E                             K  E  R     B  B  D   1   1 2   2 3   3 4   4 5   5

CAD020748125   CASMALIA RESOURCES            L 31  AS  6.0  T  2   1   N 2   N

------------------------------- RCRA WASTE CODE=U007 WDESC=A08 -------------------------------

                                                R
                                                E  K                   A     A     A     A     A
                                                C  E                   V     V     V     V     V
F              N                             B  T  Y     Q  U      A   A A   A A   A A   A A   A
C              A                             O  Y  L     T  O  T   T   I T   I T   I T   I T   I
I              M                             O  P  T     Y  M  R   R   L R   L R   L R   L R   L
D              E                             K  E  R     B  B  D   1   1 2   2 3   3 4   4 5   5

TXD091270017   CECOS INTERNATIONAL INC.      N 20  A   4.0  T

------------------------------- RCRA WASTE CODE=U092 WDESC=A08 -------------------------------

                                                R
                                                E  K                   A     A     A     A     A
                                                C  E                   V     V     V     V     V
F              N                             B  T  Y     Q  U      A   A A   A A   A A   A A   A
C              A                             O  Y  L     T  O  T   T   I T   I T   I T   I T   I
I              M                             O  P  T     Y  M  R   R   L R   L R   L R   L R   L
D              E                             K  E  R     B  B  D   1   1 2   2 3   3 4   4 5   5

LAD008176390   AMERICAN CYANAMID CO          K 61  F   1.0  T

------------------------------- RCRA WASTE CODE=U102 WDESC=A06 -------------------------------

                                                R
                                                E  K                   A     A     A     A     A
                                                C  E                   V     V     V     V     V
F              N                             B  T  Y     Q  U      A   A A   A A   A A   A A   A
C              A                             O  Y  L     T  O  T   T   I T   I T   I T   I T   I
I              M                             O  P  T     Y  M  R   R   L R   L R   L R   L R   L
D              E                             K  E  R     B  B  D   1   1 2   2 3   3 4   4 5   5

NYD080336241   CECOS INTERNATIONAL           L 31  BA 50.0  T
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                         REQUEST FOR TIM HOLDEN                       19:38 Thursday, October 20, 1988  62
                  PREPARED BY OPRA, REQUEST NUMBER C0853A
                         DATA SOURCE: TSDR SOURCE

               NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------ RCRA WASTE CODE-U107 WDESC-AEF ------------------------------

                                                        R
                                                        E K               A    A    A    A    A
                                                        C E     Q U       V    V    V    V    V
F             N                                       B T Y     T O    A  A A  A A  A A  A A  A
C             A                                       O Y L     Y M T  T  I T  I T  I T  I T  I
I             M                                       O P T     8 8 R  R  L R  L R  L R  L R  L
D             E                                       K E R     0 0 D  1  1 2  2 3  3 4  4 5  5

WVD005005509  UNION CARBIDE AGRIC PROD CO INC        L 31 N   1.0 T

------------------------------ RCRA WASTE CODE-U116 WDESC-A06 ------------------------------

                                                        R
                                                        E K               A    A    A    A    A
                                                        C E     Q U       V    V    V    V    V
F             N                                       B T Y     T O    A  A A  A A  A A  A A  A
C             A                                       O Y L     Y M T  T  I T  I T  I T  I T  I
I             M                                       O P T     8 8 R  R  L R  L R  L R  L R  L
D             E                                       K E R     0 0 D  1  1 2  2 3  3 4  4 5  5

TXD069450278  HOECHST CELANESE  CORPORATION          K 56 S   0.0 G
TXD078432457  CELANESE CHEMICAL CO                   K 67 A   0.0 G
TXD078432457  CELANESE CHEMICAL CO                   N 20 A  49.0 T 40 6  N 21 N 22 N 24 N 6  N

------------------------------ RCRA WASTE CODE-U116 WDESC-B70 ------------------------------

                                                        R
                                                        E K               A    A    A    A    A
                                                        C E     Q U       V    V    V    V    V
F             N                                       B T Y     T O    A  A A  A A  A A  A A  A
C             A                                       O Y L     Y M T  T  I T  I T  I T  I T  I
I             M                                       O P T     8 8 R  R  L R  L R  L R  L R  L
D             E                                       K E R     0 0 D  1  1 2  2 3  3 4  4 5  5

TXD027147115  MALONE SERVICE CO                      N 24 W   2.0 T

------------------------------ RCRA WASTE CODE-U134 WDESC-A06 ------------------------------

                                                        R
                                                        E K               A    A    A    A    A
                                                        C E     Q U       V    V    V    V    V
F             N                                       B T Y     T O    A  A A  A A  A A  A A  A
C             A                                       O Y L     Y M T  T  I T  I T  I T  I T  I
I             M                                       O P T     8 8 R  R  L R  L R  L R  L R  L
D             E                                       K E R     0 0 D  1  1 2  2 3  3 4  4 5  5

CAD020748125  CASMALIA RESOURCES                     L 31 AV  1.0 T 15 38 N
TXD069450278  HOECHST CELANESE  CORPORATION          K 55 X   0.0 G
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                                   REQUEST FOR TIM HOLDEN                              19:38 Thursday, October 20, 1988  63
                           PREPARED BY DPRA, REQUEST NUMBER C0853A
                                 DATA SOURCE: TSDR SOURCE

                          NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------------------- RCRA WASTE CODE-U134 WDESC-A11 ----------------------------------------

                                                     R
                                                     E   K                      A      A      A      A      A
                                                     C   E                      V      V      V      V      V
F                N                               B   T   Y     Q   U       A    A  A   A  A   A  A   A  A   A
C                A                               O   Y   L     T   O   T   T    I  T   I  T   I  T   I  T   I
I                M                               O   P   T     Y   M   R   R    L  R   L  R   L  R   L  R   L
D                E                               K   E   R     8   8   D   1    1  2   2  3   3  4   4  5   5

OHD087433744     CECOS INTERNATIONAL INC         L   31  AO  1.0   T   36  30   N

---------------------------------------- RCRA WASTE CODE-U134 WDESC-B06 ----------------------------------------

                                                     R
                                                     E   K                      A      A      A      A      A
                                                     C   E                      V      V      V      V      V
F                N                               B   T   Y     Q   U       A    A  A   A  A   A  A   A  A   A
C                A                               O   Y   L     T   O   T   T    I  T   I  T   I  T   I  T   I
I                M                               O   P   T     Y   M   R   R    L  R   L  R   L  R   L  R   L
D                E                               K   E   R     8   8   D   1    1  2   2  3   3  4   4  5   5

TXD000719518     DISPOSAL SYSTEMS INC- DEER PARK N   24  B 660.0   T   36  30   N
TXD027147115     MALONE SERVICE CO               N   24  Q  60.0   T

---------------------------------------- RCRA WASTE CODE-U134 WDESC-B66 ----------------------------------------

                                                     R
                                                     E   K                      A      A      A      A      A
                                                     C   E                      V      V      V      V      V
F                N                               B   T   Y     Q   U       A    A  A   A  A   A  A   A  A   A
C                A                               O   Y   L     T   O   T   T    I  T   I  T   I  T   I  T   I
I                M                               O   P   T     Y   M   R   R    L  R   L  R   L  R   L  R   L
D                E                               K   E   R     8   8   D   1    1  2   2  3   3  4   4  5   6

NVT330010000     US ECOLOGY CHEM SITE INC        L   35  AE  1.0   T   67  63   N
NVT330010000     US ECOLOGY CHEM SITE INC        L   35  I   1.0   T   67  63   N

---------------------------------------- RCRA WASTE CODE-U134 WDESC-B08 ----------------------------------------

                                                     R
                                                     E   K                      A      A      A      A      A
                                                     C   E                      V      V      V      V      V
F                N                               B   T   Y     Q   U       A    A  A   A  A   A  A   A  A   A
C                A                               O   Y   L     T   O   T   T    I  T   I  T   I  T   I  T   I
I                M                               O   P   T     Y   M   R   R    L  R   L  R   L  R   L  R   L
D                E                               K   E   R     8   8   D   1    1  2   2  3   3  4   4  5   5

NVT330010000     US ECOLOGY CHEM SITE INC        L   35  AE  0.5   T   57  53   N
NVT330010000     US ECOLOGY CHEM SITE INC        L   35  I   1.0   T   57  53   N
```

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```
                    REQUEST FOR TIM HOLDEN                        19:38 Thursday, October 20, 1988  64
             PREPARED BY OPRA, REQUEST NUMBER C0853A
                   DATA SOURCE: TSDR SOURCE

               NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------------- RCRA WASTE CODE-U190 WDESC-A12 ----------------------------------

                                            R
                                            E K                     A    A    A    A    A
                                            C E                     V    V    V    V    V
F             N                           B T Y           Q U    A  A A  A A  A A  A A  A
C             A                           O Y L           T O T  T  I T  I T  I T  I T  I
I             M                           O P T           Y M R  R  L R  L R  L R  L R  L
D             E                           K E R           0 0 D  1  1 2  2 3  3 4  4 5  6

CAD020748125  CASMALIA RESOURCES          L 31 AW       7.0 T

---------------------------------- RCRA WASTE CODE-U190 WDESC-A -----------------------------------

                                            R
                                            E K                     A    A    A    A    A
                                            C E                     V    V    V    V    V
F             N                           B T Y           Q U    A  A A  A A  A A  A A  A
C             A                           O Y L           T O T  T  I T  I T  I T  I T  I
I             M                           O P T           Y M R  R  L R  L R  L R  L R  L
D             E                           K E R           0 0 D  1  1 2  2 3  3 4  4 5  6

PAD085690592  WASTE CONVERSION INC.       J 34 M        7.0 T
PAD085690592  WASTE CONVERSION INC.       J 40 M        4.0 T

---------------------------------- RCRA WASTE CODE-U190 WDESC-A06 ----------------------------------

                                            R
                                            E K                     A    A    A    A    A
                                            C E                     V    V    V    V    V
F             N                           B T Y           Q U    A  A A  A A  A A  A A  A
C             A                           O Y L           T O T  T  I T  I T  I T  I T  I
I             M                           O P T           Y M R  R  L R  L R  L R  L R  L
D             E                           K E R           0 0 D  1  1 2  2 3  3 4  4 5  6

ILD010284240  CID LANDFILL                L 31 AY   11660.0 G

---------------------------------- RCRA WASTE CODE-U190 WDESC-A07 ----------------------------------

                                            R
                                            E K                     A    A    A    A    A
                                            C E                     V    V    V    V    V
F             N                           B T Y           Q U    A  A A  A A  A A  A A  A
C             A                           O Y L           T O T  T  I T  I T  I T  I T  I
I             M                           O P T           Y M R  R  L R  L R  L R  L R  L
D             E                           K E R           0 0 D  1  1 2  2 3  3 4  4 5  5

NJD001700707  MONSANTO CO BRIDGEPORT NJ PLANT  L [illegible] [illegible]  79.0 T
TXD000[illegible]249  GULF COAST WASTE DISPOSAL AUTHORITY  [illegible] [illegible] [illegible]  8.0 T
```

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```
                         NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

----------------------------------------------- RCRA WASTE CODE-U190 WDESC-A00 -----------------------------------------------

                                                   R
                                                   E  K                             A     A     A     A     A
                                                   C  E                             V     V     V     V     V
F              N                                B  T  Y     Q  U     A              A  A  A  A  A  A  A  A  A
C              A                                O  Y  L     T  O  T  T              I  T  I  T  I  T  I  T  I
I              M                                O  P  T     Y  M  R  R              L  R  L  R  L  R  L  R  L
D              E                                K  E  R     0  0  D  1              1  2  2  3  3  4  4  5  5

NYD000336241   CECOS INTERNATIONAL              L  31 BP  0.0  T

----------------------------------------------- RCRA WASTE CODE-U190 WDESC-A11 -----------------------------------------------

                                                   R
                                                   E  K                             A     A     A     A     A
                                                   C  E                             V     V     V     V     V
F              N                                B  T  Y     Q  U     A              A  A  A  A  A  A  A  A  A
C              A                                O  Y  L     T  O  T  T              I  T  I  T  I  T  I  T  I
I              M                                O  P  T     Y  M  R  R              L  R  L  R  L  R  L  R  L
D              E                                K  E  R     0  0  D  1              1  2  2  3  3  4  4  5  5

OHD087433744   CECOS INTERNATIONAL INC          L  31 AY  32.0 T

----------------------------------------------- RCRA WASTE CODE-U190 WDESC-B00 -----------------------------------------------

                                                   R
                                                   E  K                             A     A     A     A     A
                                                   C  E                             V     V     V     V     V
F              N                                B  T  Y     Q  U     A              A  A  A  A  A  A  A  A  A
C              A                                O  Y  L     T  O  T  T              I  T  I  T  I  T  I  T  I
I              M                                O  P  T     Y  M  R  R              L  R  L  R  L  R  L  R  L
D              E                                K  E  R     0  0  D  1              1  2  2  3  3  4  4  5  5

NVT330010000   US ECOLOGY CHEM SITE INC         L  36 AM   1.0 T  67 63             N

----------------------------------------------- RCRA WASTE CODE-U190 WDESC-B90 -----------------------------------------------

                                                   R
                                                   E  K                             A     A     A     A     A
                                                   C  E                             V     V     V     V     V
F              N                                B  T  Y     Q  U     A              A  A  A  A  A  A  A  A  A
C              A                                O  Y  L     T  O  T  T              I  T  I  T  I  T  I  T  I
I              M                                O  P  T     Y  M  R  R              L  R  L  R  L  R  L  R  L
D              E                                K  E  R     0  0  D  1              1  2  2  3  3  4  4  5  5

OHD087433744   CECOS INTERNATIONAL INC          L  [illegible] CC  [illegible].0 T  20 7  N
```

```
[illegible]
PREPARED BY [illegible]
DATA SOURCE [illegible]

NON CRI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTION.

Waste Code-U221 Waste Description-A06

                                               R
                                               E   K                         A      A     A     A     A
                                               C   E                         V      V     V     V     V
F             N                             B  T   Y           Q  U       A  A   A  A  A  A  A  A  A  A
C             A                             O  Y   L           T  O    T  T  I   T  I  T  I  T  I  T  I
I             M                             O  P   T           Y  M    R  R  L   R  L  R  L  R  L  R  L
D             E                             K  E   R           B  B    D  1  1   2  2  3  3  4  4  5  5

OHD087433744  CECOS INTERNATIONAL INC       L 31   HC        5.0  TONS 1  1  NO
TXD000092793  DOW CHEMICAL CO               L 31   J         6.0  TONS 1  1  YES
TXD069452340  TEXAS ECOLOGISTS INC.         L 31   X       394.0  TONS 2  1  NO  2  NO

------------------------------ Waste Code=U221 Waste Description=A07 ------------------------------

                                               R
                                               E   K                         A      A     A     A     A
                                               C   E                         V      V     V     V     V
F             N                             B  T   Y           Q  U       A  A   A  A  A  A  A  A  A  A
C             A                             O  Y   L           T  O    T  T  I   T  I  T  I  T  I  T  I
I             M                             O  P   T           Y  M    R  R  L   R  L  R  L  R  L  R  L
D             E                             K  E   R           B  B    D  1  1   2  2  3  3  4  4  5  5

TXD058260977  MOBAY CORPORATION             J 34   B      1250.0  TONS 1  1  NO  2  NO

------------------------------ Waste Code=U221 Waste Description=B64 ------------------------------

                                               R
                                               E   K                         A      A     A     A     A
                                               C   E                         V      V     V     V     V
F             N                             B  T   Y           Q  U       A  A   A  A  A  A  A  A  A  A
C             A                             O  Y   L           T  O    T  T  I   T  I  T  I  T  I  T  I
I             M                             O  P   T           Y  M    R  R  L   R  L  R  L  R  L  R  L
D             E                             K  E   R           B  B    D  1  1   2  2  3  3  4  4  5  5

LAD008213191  RUBICON INC                   K 59   E         0.0  TONS
LAD008213191  RUBICON INC                   N 24   E    111767.0  TONS 36 18 YES 28 YES 5 NO 21 NO 22 NO

------------------------------ Waste Code-U221 Waste Description=B90 ------------------------------

                                               R
                                               E   K                         A      A     A     A     A
                                               C   E                         V      V     V     V     V
F             N                             B  T   Y           Q  U       A  A   A  A  A  A  A  A  A  A
C             A                             O  Y   L           T  O    T  T  I   T  I  T  I  T  I  T  I
I             M                             O  P   T           Y  M    R  R  L   R  L  R  L  R  L  R  L
D             E                             K  E   R           B  B    D  1  1   2  2  3  3  4  4  5  5

OHD087433744  CECOS INTERNATIONAL INC       I 85   AK       21.0  TONS 20 7  NO
OHD087433744  CECOS INTERNATIONAL INC       I 85   EH        1.0  TONS 2  1  NO  2  NO
```

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```
                    NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

---------------------------------- RCRA WASTE CODE-U200 WDESC-002 ----------------------------------

                                                   R
                                                   E   K                  A    A    A    A    A
                                                   C   E                  V    V    V    V    V
F             N                                 B  T   Y       Q  U    A  A A  A A  A A  A A  A
C             A                                 O  Y   L       T  O  T T  I T  I T  I T  I T  I
I             M                                 O  P   T       Y  M  R R  L R  L R  L R  L R  L
D             E                                 K  E   R       8  8  D 1  1 2  2 3  3 4  4 5  5

LAD000610266  CECOS INTERNATIONAL INC.          K  69  AG   2600.0  T  6 6  N 21 N 22 N
LAD000610266  CECOS INTERNATIONAL INC.          N  24  AG   2600.0  T

------------------------------------ RCRA WASTE CODE-U200 WDESC-0NA ------------------------------------

                                                   R
                                                   E   K                  A    A    A    A    A
                                                   C   E                  V    V    V    V    V
F             N                                 B  T   Y       Q  U    A  A A  A A  A A  A A  A
C             A                                 O  Y   L       T  O  T T  I T  I T  I T  I T  I
I             M                                 O  P   T       Y  M  R R  L R  L R  L R  L R  L
D             E                                 K  E   R       8  8  D 1  1 2  2 3  3 4  4 5  5

LAD000610266  CECOS INTERNATIONAL INC.          K  69  AH     33.0  T  3 10 N 20 N
LAD000610266  CECOS INTERNATIONAL INC.          N  24  AH     33.0  T

------------------------------------ RCRA WASTE CODE-U242 WDESC-0 ------------------------------------

                                                   R
                                                   E   K                  A    A    A    A    A
                                                   C   E                  V    V    V    V    V
F             N                                 B  T   Y       Q  U    A  A A  A A  A A  A A  A
C             A                                 O  Y   L       T  O  T T  I T  I T  I T  I T  I
I             M                                 O  P   T       Y  M  R R  L R  L R  L R  L R  L
D             E                                 K  E   R       8  8  D 1  1 2  2 3  3 4  4 5  5

ILD000806012  PEORIA DISPOSAL CO.               L  35  AN  63732.0  G  1 1  N

---------------------------------- RCRA WASTE CODE-U242 WDESC-037 ----------------------------------

                                                   R
                                                   E   K                  A    A    A    A    A
                                                   C   E                  V    V    V    V    V
F             N                                 B  T   Y       Q  U    A  A A  A A  A A  A A  A
C             A                                 O  Y   L       T  O  T T  I T  I T  I T  I T  I
I             M                                 O  P   T       Y  M  R R  L R  L R  L R  L R  L
D             E                                 K  E   R       8  8  D 1  1 2  2 3  3 4  4 5  5

NVT330010000  US ECOLOGY CHEM SITE INC          L  [illegible]  [illegible]      1.0  T
```

```
                    REQUEST FOR [illegible] HOLDER                    [illegible] Thursday, December 1, 1988  49
               PREPARED BY OPRA, REQUEST NUMBER C0853A
                       DATA SOURCE: TSDR SOURCE

                  NON-CBI FACILITIES WITH SELECTED WASTE CODE/WASTE DESCRIPTIONS

------------------------------------------- Waste Code=U223 Waste Description=A05 -------------------------------------------

                                                         R
                                                         E  K                                 A     A     A     A     A
   F             N                                       C  E                                 V     V     V     V     V
   C             A                                    B  T  Y      Q    U              A      A  A  A  A  A  A  A  A  A
   I             M                                    O  Y  L      T    O       T      T      I  T  I  T  I  T  I  T  I
   O             E                                    O  P  T      Y    M       R      R      L  R  L  R  L  R  L  R  L
                                                      K  E  R      8    8       D      1      1  2  2  3  3  4  4  5  5

   WVD004325353  UNION CARBIDE CORP SISTERSVILLE PLANT  K 55  D  .   0.0  TONS

------------------------------------------- Waste Code=U223 Waste Description=A06 -------------------------------------------

                                                         R
                                                         E  K                                 A     A     A     A     A
   F             N                                       C  E                                 V     V     V     V     V
   C             A                                    B  T  Y      Q    U              A      A  A  A  A  A  A  A  A  A
   I             M                                    O  Y  L      T    O       T      T      I  T  I  T  I  T  I  T  I
   O             E                                    O  P  T      Y    M       R      R      L  R  L  R  L  R  L  R  L
                                                      K  E  R      8    8       D      1      1  2  2  3  3  4  4  5  5

   OHD045243706  ENVIROSAFE SERVICES OF OHIO, INC.    L 31  Z    10.0  TONS     1      1      NO
   OHD087433744  CECOS INTERNATIONAL INC              L 31  BD    6.0  TONS     1      1      NO

------------------------------------------- Waste Code=U223 Waste Description=AEF -------------------------------------------

                                                         R
                                                         E  K                                 A     A     A     A     A
   F             N                                       C  E                                 V     V     V     V     V
   C             A                                    B  T  Y      Q    U              A      A  A  A  A  A  A  A  A  A
   I             M                                    O  Y  L      T    O       T      T      I  T  I  T  I  T  I  T  I
   O             E                                    O  P  T      Y    M       R      R      L  R  L  R  L  R  L  R  L
                                                      K  E  R      8    8       D      1      1  2  2  3  3  4  4  5  5

   WVD005005509  UNION CARBIDE AGRIC PROD CO INC      L 31  L     1.0  TONS    57     53
```

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5539s

Aggregate CBI Data

Waste code	Volume requiring alternative treatment capacity (gal)
F007	530,547
F008	563,187
F009	8,067
F019	1,250,160
K009	54,370,000
K010	54,370,000
K027	2,981,520
P030	8,880
P089	720
P094	240
U190	43,440

ATTACHMENT 2

Waste Description Codes

WASTE DESCRIPTION CODES

These waste description codes were developed specifically for this survey to supplement the descriptions listed with the RCRA and other waste codes. (These waste description codes are not regulatory definitions.)

WASTE DESCRIPTION CODES FOR HAZARDOUS WASTE DESCRIBED BY A SINGLE RCRA F, K, P, OR U WASTE CODE

A01 Spent solvent (F001-F005, K086)
A02 Other organic liquid (F001-F005, K086)
A03 Still bottom (F001-F005, K086)
A04 Other organic sludge (F001-F005, K086)
A05 Wastewater or aqueous mixture
A06 Contaminated soil or cleanup residue
A07 Other F or K waste, exactly as described*
A08 Concentrated off-spec or discarded product
A09 Empty containers
A10 Incinerator ash
A11 Solidified treatment residue
A12 Other treatment residue (specify in "Facility Notes")
A13 Other untreated waste (specify in "Facility Notes")

---

*"Exactly as described" means that the waste matches the description of the RCRA waste code.

WASTE DESCRIPTION CODES FOR HAZARDOUS WASTE DESCRIBED BY A SINGLE RCRA D OR X WASTE CODE OR THAT DESCRIBED BY MORE THAN ONE RCRA OR X WASTE CODE

INORGANIC LIQUIDS—Waste that is primarily inorganic and highly fluid (e.g., aqueous), with low suspended inorganic solids and low organic content.

B01 Aqueous waste with low solvents
BC2 Aqueous waste with low other toxic organics
B03 Spent acid with metals
B04 Spent acid without metals
B05 Acidic aqueous waste
B06 Caustic solution with metals but no cyanides
B07 Caustic solution with metals and cyanides
B08 Caustic solution with cyanides but no metals
B09 Spent caustic
B10 Caustic aqueous waste
B11 Aqueous waste with reactive sulfides
B12 Aqueous waste with other reactives (e.g., explosives)
B13 Other aqueous waste with high dissolved solids
B14 Other aqueous waste with low dissolved solids
B15 Scrubber water
B16 Leachate
B17 Waste liquid mercury
B18 Other inorganic liquid (specify in "Facility Notes")

INORGANIC SLUDGES—Waste that is primarily inorganic, with moderate-to-high water content and low organic content; pumpable.

B19 Lime sludge without metals
B20 Lime sludge with metals/metal hydroxide sludge
B21 Wastewater treatment sludge with toxic organics
B22 Other wastewater treatment sludge
B23 Untreated plating sludge without cyanides
B24 Untreated plating sludge with cyanides
B25 Other sludge with cyanides
B26 Sludge with reactive sulfides
B27 Sludge with other reactives
B28 Degreasing sludge with metal scale or filings
B29 Air pollution control device sludge (e.g., fly ash, wet scrubber sludge)
B30 Sediment or lagoon dragout contaminated with organics
B31 Sediment or lagoon dragout contaminated with inorganics only
B32 Drilling mud
B33 Asbestos slurry or sludge
B34 Chloride or other brine sludge
B35 Other inorganic sludge (specify in "Facility Notes")

INORGANIC SOLIDS—Waste that is primarily inorganic and solid, with low organic content and low-to-moderate water content; not pumpable.

B36 Soil contaminated with organics
B37 Soil contaminated with inorganics only
B38 Ash, slag, or other residue from incineration of wastes
B39 Other "dry" ash, slag, or thermal residue
B40 "Dry" lime or metal hydroxide solids chemically "fixed"
B41 "Dry" lime or metal hydroxide solids not "fixed"
B42 Metal scale, filings, or scrap
B43 Empty or crushed metal drums or containers
B44 Batteries or battery parts, casings, cores
B45 Spent solid filters or adsorbents
B46 Asbestos solids and debris
B47 Metal-cyanide salts/chemicals
B48 Reactive cyanide salts/chemicals
B49 Reactive sulfide salts/chemicals
B50 Other reactive salts/chemicals
B51 Other metal salts/chemicals
B52 Other waste inorganic chemicals
B53 Lab packs of old chemicals only
B54 Lab packs of debris only
B55 Mixed lab packs
B56 Other inorganic solids (specify in "Facility Notes")

INORGANIC GASES—Waste that is primarily inorganic with a low organic content and is a gas at atmospheric pressure.

B57 Inorganic gases

ORGANIC LIQUIDS—Waste that is primarily organic and is highly fluid, with low inorganic solids content and low-to-moderate water content.

B58 Concentrated solvent-water solution
B59 Halogenated (e.g., chlorinated) solvent
B60 Nonhalogenated solvent
B61 Halogenated/nonhalogenated solvent mixture
B62 Oil-water emulsion or mixture
B63 Waste oil
B64 Concentrated aqueous solution of other organics
B65 Concentrated phenolics
B66 Organic paint, ink, lacquer, or varnish
B67 Adhesives or expoxies
B68 Paint thinner or petroleum distillates
B69 Reactive or polymerizable organic liquid
B70 Other organic liquid (specify in "Facility Notes")

ORGANIC SLUDGES—Waste that is primarily organic, with low-to-moderate inorganic solids content and water content; pumpable.

B71 Still bottoms of halogenated (e.g., chlorinated) solvents or other organic liquids
B72 Still bottoms of nonhalogenated solvents or other organic liquids
B73 Oily sludge
B74 Organic paint or ink sludge
B75 Reactive or polymerizable organics
B76 Resins, tars, or tarry sludge
B77 Biological treatment sludge
B78 Sewage or other untreated biological sludge
B79 Other organic sludge (specify in "Facility Notes")

ORGANIC SOLIDS—Waste that is primarily organic and solid, with low-to-moderate inorganic content and water content; not pumpable.

B80 Halogenated pesticide solid
B81 Nonhalogenated pesticide solid
B82 Solid resins or polymerized organics
B83 Spent carbon
B84 Reactive organic solid
B85 Empty fiber or plastic containers
B86 Lab packs of old chemicals only
B87 Lab packs of debris only
B88 Mixed lab packs
B89 Other halogenated organic solid
B90 Other nonhalogenated organic solid

ORGANIC GASES—Waste that is primarily organic with low-to-moderate inorganic content and is a gas at atmospheric pressure.

B91 Organic gases

NOTE: A list of X waste codes was developed specifically for this survey. These X codes are not official RCRA waste codes and should be used ONLY for this survey.

APPENDIX D

Alternative Treatment/Recovery Technology Groups

APPENDIX D

Alternative Treatment/Recovery Technologies (AT/RT) for Each Waste Group

TRD group	AT/RT codes
1	1
2	1,2
3	1b,2b
4	1a,2a,3,4
5	5,21,22
6	7a,41a
7	1b,2b,8
8	9,10
9	4,11,1b,2b
10	12,13,49
11	14,13,50
12	15
13	16,10
14	17
15	18
16	19
17	20
18	10
19	5,21,22,3,4
20	7
21	23,5,21,22,8
22	7,12,13,49
23	5,22,24,25
24	26,1a,2a
25	26,1b,2b
26	26,1a,2a,3,4
27	27,7a,41a
28	28
29	29
30	30,31
31	32,17
32	34,1b,2b
33	1b,2b,3,4,11
34	10,35
35	38
36	1b,2b,5,21,22
37	1a
38	1b
39	1a,2a
40	5,21,22,24,6
41	52
42	6,21,22
43	44

APPENDIX D (continued)

TRD group	AT/RT codes
44	7b,41b
45	36,40
46	5,6,21,22
47	6
48	42,43
49	5,21,22,67
50	34,1b,2b
51	45
52	46
53	47,48
54	39
55	26,1,2
56	51
57	53
58	1a,2a,21,22
59	56,41
60	54
61	55
62	56a,41a
63	56b,41b
64	56c,41c
65	7,41
66	14,50
67	57
68	58
69	62
70	63,64
71	10,16,30,31
72	13
73	59,60
73A	65,66
74	59,60,61
75	48,59
77	7b,36,41b,43
78	13,68
79	36,42,43
81	21,22,70
82	69
83	7a
84	70
85	1,71,21,22
86	6, 72, 73

APPENDIX E

Alternative Treatment/Recovery Technologies

APPENDIX E

Alternative Treatment/Recovery Technologies

Alternative Treatment/Recovery Technology Codes	Description
1	Incineration of solids
1a	Incineration of sludges
1b	Incineration of liquids
1c	Incineration of gases
2	Reuse as fuel of solids
2a	Reuse as fuel of sludges
2b	Reuse as fuel of liquids
3	Solvent extraction
4	Fractionation or batch still distillation
5	Carbon adsorption
6	Biological treatment
7	Incineration of solids followed by stabilization of the ash and chromium reduction followed by metals precipitation of scrubber water with stabilization of treatment sludge
7a	Incineration of sludges followed by stabilization of the ash and chromium reduction followed by metals precipitation of scrubber water with stabilization of treatment sludge
7b	Incineration of liquids followed by stabilization of the ash and chromium reduction followed by metals precipitation of scrubber water with stabilization of treatment sludge
8	Solvent extraction followed by steam stripping and carbon adsorption
9	Retorting followed by stabilization of the ash
10	Cement based or pozzolanic stabilization
11	Thin film evaporation
12	Cyanide oxidation followed by chemical precipitation, sludge dewatering, and stabilization of the sludge
13	Wet air oxidation followed by carbon adsorption, chemical precipitation, sludge dewatering, and stabilization of the sludge
14	Slurrying followed by cyanide oxidation, chemical precipitation, sludge dewatering, and stabilization of the sludge

APPENDIX E (continued)

Alternative Treatment/Recovery Technology Codes	Description
15	Chemical precipitation, sludge dewatering, and stabilization of the sludge
16	Slurrying followed by chemical precipitation, sludge dewatering, and stabilization of the sludge
17	Chrome reduction followed by chemical precipitation, sludge dewatering, and stabilization
18	Slurrying followed by chrome reduction, chemical precipitation, sludge dewatering, and stabilization
19	Cyanide oxidation
20	Slurrying followed by cyanide oxidation
21	Wet air oxidation followed by carbon adsorption
22	Wet air oxidation followed by biological treatment
23	Solvent extraction followed by steam stripping
24	Steam or air stripping followed by carbon adsorption
25	Fractionation, batch still distillation, or solvent extraction followed by incineration of the organic stream
26	Rotary kiln or fluidized bed incineration
27	Rotary kiln or fluidized bed incineration of sludges followed by stabilization of the ash and metals precipitation of scrubber water with stabilization of treatment sludge
28	Chlorination followed by vacuum filtration, followed by sulfide precipitation, filtration, and sludge dewatering of the filtrate from the vacuum filter
29	Solvent extraction followed by incineration or reuse as fuel of the extract and steam stripping and carbon adsorption of the wastewater
30	Secondary smelting.
31	Secondary smelting followed by stabilization of the slag
32	Chromium reduction followed by chemical precipitation and vacuum filtration
33	Chromium reduction followed by chemical precipitation and sludge dewatering
34	Liquid injection incineration or reuse as fuel

APPENDIX E (continued)

Alternative Treatment/Recovery Technology Codes	Description
35	Incineration followed by dissolving of the ash, sulfide precipitation, sludge dewatering, and stabilization
36	Carbon adsorption followed by chromium reduction, chemical precipitation, sludge dewatering and stabilization
37	Solids blending
38	Neutralization
39	Electrochemical cyanide oxidation followed by alkaline chlorination, chemical precipitation, sludge dewatering, and stabilization
40	Wet air oxidation, followed by carbon adsorption, chromium reduction, chemical precipitation, sludge dewatering, and stabilization
41	Reuse as fuel of solids followed by stabilization of the ash from boilers and process heaters
41a	Reuse as fuel of sludges followed by stabilization of the ash from boilers and process heaters
41b	Reuse as fuel of liquids followed by stabilization of the ash from boilers and process heaters
42	Stripping followed by carbon adsorption, chromium reduction, chemical precipitation, sludge dewatering, and stabilization
43	Wet air oxidation followed by carbon adsorption, chromium reduction, chemical precipitation, sludge dewatering, and stabilization
44	Steam stripping followed by chemical precipitation, sludge dewatering, and stabilization
45	Sulfide precipitation followed by sludge dewatering and stabilization
46	Slurrying followed by sulfide precipitation, sludge dewatering, and stabilization
47	Cyanide oxidation followed by sulfide precipitation, sludge dewatering, and stabilization

APPENDIX E (continued)

Alternative Treatment/Recovery Technology Codes	Description
48	Wet air oxidation, followed by carbon adsorption, sulfide precipitation, sludge dewatering, and stabilization
49	Cyanide oxidation followed by chemical precipitation, sludge dewatering and stabilization
50	Slurrying followed by cyanide oxidation, chemical precipitation, sludge dewatering, and stabilization
51	The waste already meets BDAT treatment standard
53	Lab pack waste
55	Total recycle of K069
56	Incineration of solids followed by stabilization of the ash and chemical precipitation of the scrubber water followed by sludge dewatering and stabilization
56a	Incineration of sludges followed by stabilization of the ash and chemical precipitation of the scrubber water followed by sludge dewatering and stabilization
56b	Incineration of liquids followed by stabilization of the ash and chemical precipitation of the scrubber water followed by sludge dewatering and stabilization
56c	Incineration of gases followed by stabilization of the ash and chemical precipitation of the scrubber water followed by sludge dewatering and stabilization
58	Sludge dewatering followed by incineration of the solids with stabilization of the ash. Chromium reduction and chemical precipitation of the scrubber water followed by sludge dewatering and stabilization and oil skimming followed by chromium reduction, chemical precipitation, and sludge dewatering and stabilization, of the liquid effluent from the original dewatering
59	Carbon adsorption followed by sulfide precipitation sludge dewatering and stabilization

APPENDIX E (continued)

Alternative Treatment/Recovery Technology Codes	Description
60	Biological treatment followed by sulfide precipitation, sludge dewatering and stabilization
61	Incineration of liquids followed by stabilization of the ash and chromium reduction, sulfide precipitation of the scrubber water followed by sludge dewatering and stabilization
62	Slurrying followed by general oxidation, sulfide precipitation, sludge dewatering, and stabilization
63	Oil skimming followed by incineration of the sludge with stabilization of the ash. Chromium reduction, chemical precipitation of the scrubber water followed by sludge dewatering and stabilization, and chromium reduction followed by chemical precipitation, sludge dewatering, and stabilization of the liquid effluent.
64	Oil skimming followed by chromium reduction, chemical precipitation, sludge dewatering, and stabilization of the liquid effluent. Reuse as fuel of the sludges followed by stabilization of the ash from boilers and process heaters.
65	Cyanide oxidation followed by chromium reduction, chemical precipitation, sludge dewatering, and stabilization
66	Wet air oxidation followed by chromium reduction, chemical precipitation, sludge dewatering, and stabilization
67	General oxidation with hydrogen peroxide or potassium permanganate
68	Carbon adsorption followed by chemical precipitation sludge dewatering and stabilization
69	Steam stripping followed by chromium reduction, chemical precipitation, sludge dewatering and stabilization
70	Mixed RCRA/radioactive wastes
71	Thermal regeneration of carbon
72	Steam stripping
73	Steam stripping followed by biological treatment